THE CHILD

ITS CARE, DIET, AND COMMON ILLS

E. MATHER SILL, M. D.

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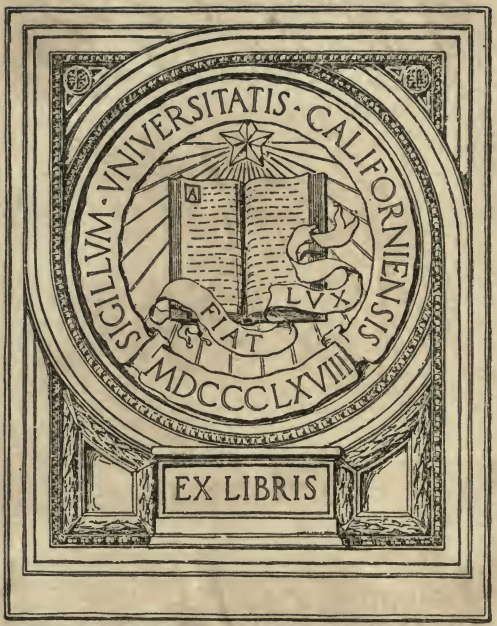
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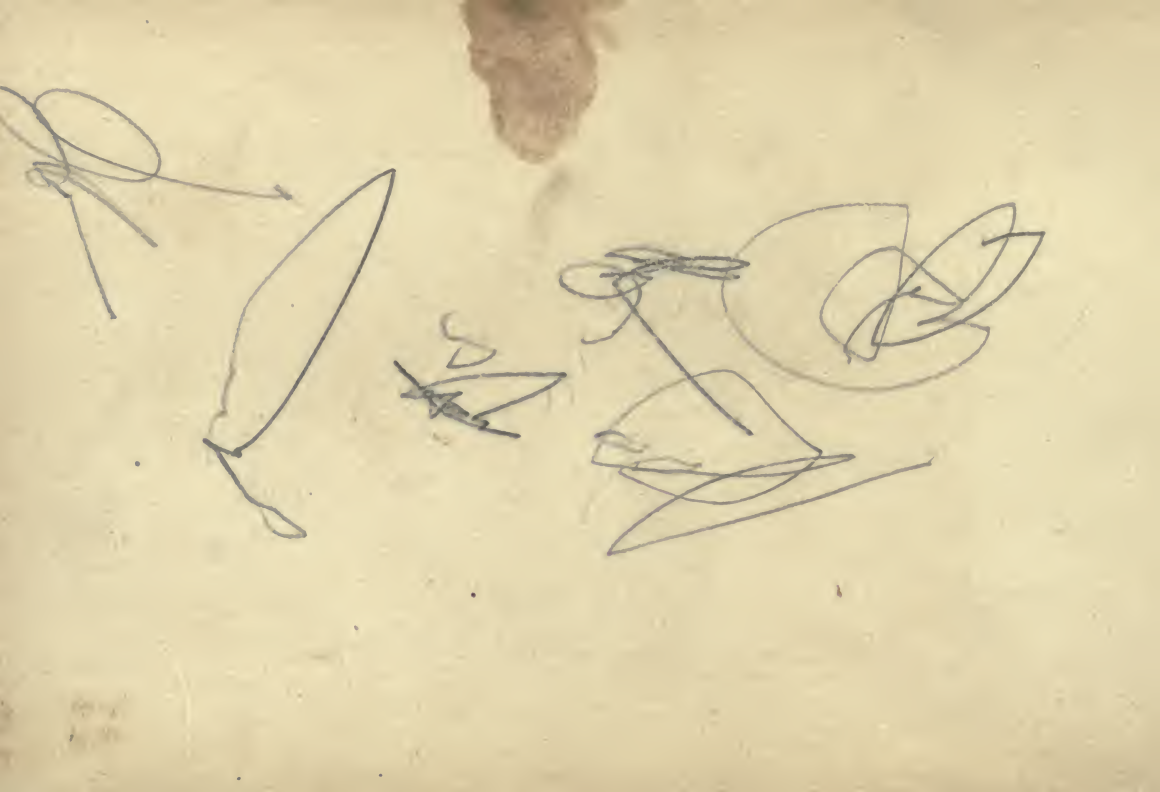

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THE CHILD

ITS CARE, DIET, AND COMMON ILLS

BY

E. MATHER SILL, M.D.

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Published May, 1913

TO MY
MOTHER

THE QUINN & BODEN CO. PRESS
RAHWAY, N. J.

To

THE YOUNG MOTHERS

IN WHOSE INTEREST THESE PAGES WERE WRITTEN

I INSCRIBE THIS LITTLE VOLUME

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FOREWORD

In this age of enlightenment the young progressive mother is not satisfied to follow the customs and dictation of her mother or grandmother. She wishes to have her methods formed upon the latest and best medical practice. She wishes to be intelligent in case of illness. She insists upon knowing the best and most scientific ways of feeding, airing, clothing, and giving out-of-door exercise. She also insists upon a knowledge of what to do in emergencies before the arrival of the doctor, and, in a general way, at least, she wishes to be able to distinguish between the different diseases which all children are more or less subject to and liable to contract.

The young mother of to-day wishes to know what to do in case of accident, injury, or accidental poisoning; she wishes to understand when it is necessary to have medical advice; in a word, she desires to acquire that confidence in herself which shall make her mistress of such situations as will most probably arise in the bringing up of her children.

To help the young mother in her efforts to attain efficiency, the author has endeavored to answer all questions that the intelligent young mother would wish to ask, and to explain the problems that are apt to confront her.

These answers and explanations are the outcome of a very large experience in the treatment of infants and young children.

The author wishes to express his thanks to Drs. Holt, Kerley, Koplik, Chapin, and others, for valuable suggestions from their works on diseases of infants and children and to his publishers, Messrs. Henry Holt and Company, for many courtesies extended to him.

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THE CHILD

"Madonnas hallow every home;
O'er every roof where babies are
Shines high and pure a guiding star;
And mother hearts do always hear
Divinest music ringing clear,
And peace and love, good will on earth,
Are born with every baby's birth."

From *Songs of Motherhood* of
Elizabeth Johnson Huckel.

THE BABY BASKET, AND WHAT IT SHOULD CONTAIN

The Baby Basket.

A baby basket, containing all the toilet articles which will be needed, is most essential, and should be in readiness, supplied as follows:

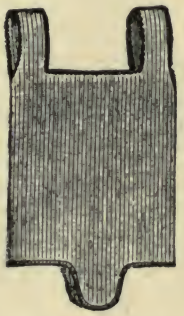
1. One good-sized pincushion.
2. Three packages safety-pins, assorted sizes (Nos. 1, 2½, 3).

3. Box talcum powder.
4. Cake Castile soap in soap-box.
5. Three knit wash-cloths.
6. Three soft bath towels and three baby towels.
7. Infant hair-brush and fine-tooth comb.
8. One tube or jar of white vaseline.
9. Puff and puff-box (absorbent cotton may be used in place of puff).
10. Half-pound absorbent cotton.
11. A bath thermometer.
12. A yard of sterile gauze and plenty of old linen.
13. A good-sized bottle of saturated solution of boracic acid for washing the eyes and mouth.
14. One package of wooden toothpicks.
15. An eiderdown blanket, a yard and a half long, to wrap the baby in.
16. A small pair of scissors.
17. Two lap-pads one-half yard square, and two pads one yard square to go in the crib.
18. A piece of bobbin to tie cord (supplied by obstetrician).
19. Bottle of sweet-oil.

CLOTHING NEEDED FOR THE EXPECTED BABY (FIRST SIX WEEKS)

1. Four second-size silk and wool shirts.
2. One yard of soft, white, Shaker flannel to be made into belly-bands. After the sixth week, knitted abdominal bands with shoulder-straps are to be preferred.
3. Two pair of Cashmere hose.
4. Two outing-flannel skirts (for the night).
5. Three flannel skirts (for the day).

6. Three white skirts (nainsook).
7. One eiderdown wrapper.
8. Three slips (bishop pattern).



Knitted Abdominal Band.

9. Four dozen cotton diapers made from bird's-eye cotton. Two sizes will be necessary:

1. Three pieces twenty inches.
2. Three pieces twenty-two inches.

And the diaper should be made 20 x 40 and 22 x 44 inches respectively.

10. Three plain slips to be used for night-dresses.
11. Two Cashmere sacques.
12. Two Shaker flannel bath aprons to be used by the nurse to wrap the baby in after the bath.

THE GERTRUDE OUTFIT FOR AN INFANT

A long, plain, light-weight, soft, white, flannel slip without sleeves, and seams on the outside; this garment is worn next to the skin and takes the place of a shirt.

Three long, plain, light-weight, soft, white, flannel slips with sleeves, and seams on the inside, to be worn over the first garment.

Three slips made like the first garment except having sleeves, to be used as night-dresses.

Three five-inch soft, white flannel binders fifteen inches long.

Twelve simple white dresses or slips of nainsook or muslin made after the bishop pattern, to be worn over the two flannel garments.

Three more elaborate dresses of the same material.

Four pair of white merino stockings.

Six pair of booties.

One dozen double white cheesecloth squares, ten inches square, to be used as diapers for the first five months.

Three dozen eighteen-inch squares of canton flannel, these being worn over the cheesecloth diapers as absorbers.

Two dozen 16 x 18 inch diapers of bird's-eye cotton.

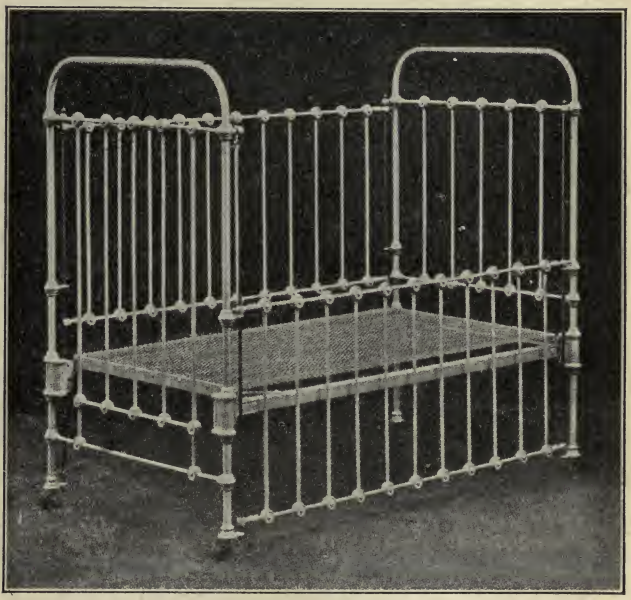
THE NURSERY

The nursery should be a large sunny room, with windows facing south. Furnace heat is to be preferred to steam. The floors should be of hardwood, or painted, and only rugs which can be taken up and shaken every day should be used. The floor should always be cleaned with a damp cloth, instead of a broom. The walls should be painted for at least four feet up from the floor. All furniture should be of the simplest kind; the beds of white enamel or brass, and few curtains or other hangings. There should always be a thermometer and the temperature kept at from 68° F. to 70° F. during the day, and never allowed to go below 55° F. at night. For children over two years of age it is safe to allow the temperature of the room to go a little below 55° F. at night or even as low as freezing-point. Each window should have a light and dark shade so that the room may be darkened when necessary. A good way to ventilate the room is by means of the window-board. This is a board four inches wide, the length of the window-sash, which fits under the lower sash, raising it so that there is an opening between the two sashes through which a current of air comes in and passes upward, affording excellent ventilation without a draught.

Food should not be allowed to stand about. No

soiled diapers should be left in the nursery, nor should they be washed or dried in that room.

A child should have its own crib. The best kind,



The Baby Crib.

as shown in the illustration, has one side that can be dropped or raised up and locked so that the child cannot get out. This crib may be used also as an exercise pen for very young children.

For the new-born infant a bassinet that does not rock should be used until the child is four or five months of age; then the bed is preferable.

For the mothers who do not wish to go to the expense of a bassinet, an ordinary clothes-basket with a pillow placed in the bottom makes an excellent sub-

Bassinet.

stitute, and, although not so showy, has the advantage of being useful for other purposes after the child has outgrown it.

An infant should never be allowed to sleep in bed with its mother or nurse, for there is not only danger that the mother may lie on the child and smother it, but if the baby is breast-fed there is always the temp-

tation to feed it at night whenever it is restless. Unless a child is trained to sleep in its own bed, it will probably be wakeful and, so, a bad habit may result.

The child's bed should be provided with a small hair mattress, protected by a rubber sheet, over which a pad should be placed and covered with a sheet. The pillow, when used, should be made of the finest curled hair and large enough to reach well beneath the child's shoulders.

A baby should not lie in one position all the time, but should be turned from side to side.

A gas stove should never be used to heat the nursery except for a few minutes while the baby is having its bath; and a gas-jet should not be allowed to burn in the room at night. If electric light is not to be had a wax candle can be lighted when necessary.

THE NURSERY-MAID

The selection of a nursery-maid is very important. Before she is engaged she should be examined by the physician of the family to ascertain if she has any physical disability that would be dangerous to children. The following qualifications are essential: She should be cleanly in her person and in her habits; she should have no decayed teeth; she should be free from all communicable diseases, such as tuberculosis, syphilis, or vaginal discharge; her mental condition should be sound; she should have an even, good-

natured disposition; and she should be absolutely trustworthy. She should enjoy the care of children, have tact to amuse and keep them happy, and be able to answer their questions intelligently and look out carefully for their wants.

There are training-schools for nursery-maids in New York and other cities, but many young women may be taught in a short time their duties and make excellent nursery-maids. Middle-aged women are often preferable as they are less apt to have their minds distracted by beaux, going out, etc., often give better service, and are more contented with their work.

TOYS

Such a topic may seem to some out of place in a book of this kind, but it is really important for every parent to know what playthings should be allowed in the nursery.

Children are easily pleased and amused; therefore, simple inexpensive toys will bring just as much joy as the more elaborate and expensive ones.

In the selection of toys the aim should be to educate the child and develop its imagination. For this purpose, such toys as picture-books, balls, blocks, boats, locomotives, cars, automobiles, and soldiers are best for boys; while for girls, dolls, doll-carriages, doll-houses, doll-furniture, picture-books, etc., answer best.

Care should be taken not to allow children to have playthings that are painted, because the paint can be

sucked off, and toys covered with hair or wool should be excluded, as the hair or wool is sure to be pulled off and put into the mouth. All small objects, such as marbles, coins, buttons, beans, beads, rings, small bells, etc., are dangerous, as they are frequently swallowed or pushed into the nose or ear. No toys with sharp points or points easily broken off should be allowed, as these are a menace to the eyes. The great tendency of young children, as we all know, is to put everything within reach into the mouth. This danger should be always present in the mother's mind, and the most watchful care exercised to prevent such a mishap.

THE TRAINED NURSE

In severe illness a trained nurse is almost indispensable, and even in less serious cases her services should be employed whenever possible. Her skilled care will add greatly to the comfort of the child and may do much toward bringing about a favorable termination of the disease.

A trained nurse should never be on duty for more than twelve hours at a time, for a tired nurse cannot give a sick baby the care it requires. When a child is so sick as to require constant attention, two nurses, one for the night, and one for the day, should be employed.

A very good mother may make a poor nurse. She is apt to be so worried and nervous when her own

child is the patient that her judgment is impaired, and she may be forgetful, and not realize the importance of those little things that are so essential to the child's comfort, such as bathing or sponging as often as directed, or washing the eyes, or irrigating the ears. The mother is apt to put too many covers over the baby and to keep the windows closed when they are ordered open. She is apt to give too much or too strong food, etc., and not infrequently she may be influenced in the care of the child more by what friends and relatives advise than by what the doctor directs.

A mother, in attempting to care for her own sick child, often breaks down with the strain and worry. She would, perhaps, make an excellent nurse for the child of another, though it might be quite unsafe for her to have the whole care of her own.

CARE OF THE NEW-BORN BABE

The cord having been tied with a piece of silk tape, the child should be wrapped in a warm woolen blanket and put in a warm room. Two drops of a two per cent solution of nitrate of silver should be dropped into each eye with an eye-dropper. The whole body should now be thoroughly oiled to remove the vernix caseosa, and then the child should be given a warm bath at a temperature of 100° F. This should be done in a warm room, preferably in front of an open fire. The mouth should be cleansed with a soft

cloth and tepid water and great gentleness should be used.

The cord should be thoroughly dusted with an absorbent powder, such as borated talcum, and wrapped in sterile gauze or soft old linen, over which a pad of sterile gauze or old linen should be placed. The abdomen should be wrapped with a soft flannel binder and the binder securely pinned. Next to the abdominal band should be placed a soft shirt of silk and wool, or silk and cotton, and a soft diaper, preferably of old linen, put on and pinned to the shirt. Over these garments a soft slip of nainsook should be placed in summer, or a soft Shaker flannel slip in winter.

Before placing the baby in the crib the hands and feet should be examined to see if they are blue or cold, and if so, hot water-bottles enveloped in flannels should be placed in the crib, about the body, but not touching it. The baby should be kept in a slightly darkened room at first.

A very convenient and unique method of dressing and undressing an infant, which I advise and most German nurses employ, is to use a small table (the ordinary folding card-table does very well) about two feet square which is thickly padded over the top and protected by a rubber sheet.

The baby is laid on the table, where it can be easily got at to put on or take off its clothes, to cleanse its mouth and nose, or wash out its eyes, or dry and powder it after the bath. In Germany special tables are made for this purpose with drawers containing the different toilet articles, etc.

THE BATH

The new-born babe should receive a daily basin bath in boiled water at a temperature of 100° F., using Castile soap. This method of bathing should be continued until after the cord dries up and drops off, and the navel is healed. At this time the child should only remain in the bath from three to four minutes, being rubbed while in the bath all over with the hand or a soft wash-cloth (never with a sponge), then dried quickly with a soft bath towel. The bath should always be given in a warm room kept at a temperature of 74° to 76° F., with all doors and windows closed, and preferably in front of a fire.

Bath Thermometer.

After the fourth month, if the child is vigorous, the bath may be given at a temperature between 90° and 95° F. At the twelfth month the temperature of the water in the bath may be gradually reduced from 90° F. in the beginning to 80° F. by adding cold water, rubbing the child meanwhile vigorously with the hand. After the baby has been washed and dried, all the folds of the skin, armpits, genitals, buttocks, etc., should be thoroughly powdered.

Before placing the child in the bath the head and face should be washed with a soft wash-cloth.

Baths serve a useful purpose in many ways other than cleanliness, and are of great aid as therapeutic agents:—

Tub Baths for Fever.—Place the child in water at a temperature of 95° F., cold water being added until the temperature is 75° or 80° F.

The child should not remain in the bath for more than fifteen minutes, and while there should be constantly rubbed with the hand from head to foot.

The Sponge Bath for Fever.—One part of alcohol to four parts of water at a temperature of 70° F. are used. The child should be stripped, and sponged under a blanket with a soft wash-cloth for fifteen minutes.

In an emergency, for sudden high fever either the tub bath or the sponge bath may be used to reduce the temperature, but should not be repeated except under the direction of a physician.

The Tepid Bath.—This should be given at a temperature of 95° to 100° F. When children are restless and irritable, a tepid bath will frequently soothe and quiet them and induce quiet sleep.

Bathing in Hot Weather.—During the extremely hot weather a basin bath, given by sponging the child all over several times a day with cool water, or water mixed with a little alcohol, will give much comfort and relief and make a trying season endurable.

The Mustard Bath.—This is prepared by adding four tablespoons of powdered mustard to four gallons

of water heated to a temperature of 105° F. The mustard is first rubbed into a thick paste by adding a little cold water, then mixed thoroughly with the hot water. The child should be constantly rubbed while in the bath.

A hot mustard bath is useful in collapse, shock, convulsions, sudden heart failure, and prostration.

The Bran Bath.—This is made by hanging a cheesecloth bag containing a quart of wheat bran in a tub of four gallons of tepid water. The bag should be frequently squeezed and moved about in the water until the water looks like thin gruel. The bran bath is of great service where the skin is extremely delicate, or there is eczema, or scalds from wet diapers, highly acid urine, perspiration, or excoriations produced by diarrhœa, etc.

Soda Bath.—This is prepared by adding a tablespoonful of bicarbonate of soda to a quart of water. Sponge the child lightly from a basin for four or five minutes and then allow the skin to dry without using friction. The soda bath is especially good to relieve the intense itching from prickly heat rash.

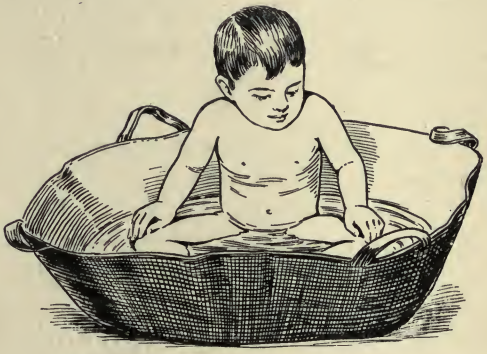
The Starch Bath.—Mix one or two tablespoons of laundry starch with a gallon or two of water. Sponge the child, and dry with a soft towel, without friction, in the same way as when the soda bath is used. The starch bath is given where there is irritation of the skin, as in hives, prickly heat, redness and excoriation of the legs and buttocks from wet diapers or diarrhœa, or too acid urine or stools.

The Salt Bath.—This is made by adding a table-

spoonful of salt to a gallon of water. It acts as a tonic, and is especially good for delicate and poorly nourished children. The child is first washed with soap and plain water, and then put in the salt water bath and dried, without rinsing in plain water.

THE RUBBER TUB

This is a very convenient thing to have, both for babies and older children, for besides being useful in the nursery, it can be folded into a small package and



Rubber Tub.

carried about from room to room or from place to place when traveling. It is almost a necessity when going to the country for the summer, especially if the country house has no running water. The tub is large enough to be used by good-sized children, or adults if desired.

CLOTHING

It is essential that infants' clothing should be soft and non-irritating to the skin, light and warm. All garments should be made loose enough to allow the

Denton Nightdress.

arms and legs to be moved freely as well as giving plenty of room about the abdomen and chest. Care should be taken that bands are not pinned so tightly about the chest or abdomen as to prevent free expansion. A woolen shirt of soft texture should be worn, and the petticoats supported from the shoulders, never from the waist.

A soft flannel abdominal band is worn for the first few weeks and this is supplanted by a knitted band with shoulder-straps.

Canton flannel makes the best absorbent diapers for young babies as they are more pliable and softer than the linen. It is very important that the young baby's feet be kept warm, as cold feet are frequently the cause of colic and indigestion. When the circula-

tion is poor a hot water-bag should be kept at the foot of the bed.

In summer the clothing should be light and loose, and that worn next to the skin of the thinnest flannel

Union Suit.

or gauze. Changes in the temperature are best met by the addition of outer wraps. In a changeable climate like New York it is a foolish fashion to have children go with bare legs, since delicate children may suffer from this method of trying to harden them.

The night clothing of an infant should consist of a loose-fitting soft flannel slip. Older children should wear a union suit with waist and trousers and feet, especially if there is a tendency to kick the cover off.

Care should be taken not to overload children with covers at night. This tendency is frequently the cause of restlessness and sleeplessness.

CARE OF THE EYES

The eyes should be protected from too strong light during early infancy, and a child should sleep in a darkened room. For a few days after birth, the baby's eyes should be washed once a day with a saturated solution of boracic acid. Eye-washes should never be used except under the direction of a physician.

CARE OF THE MOUTH AND TEETH

The mouth of a new-born babe should be gently cleansed each morning with boiled water and a soft cloth, care being taken not to injure the delicate mucous membrane lining of the mouth. When thrush or sprue, which looks like fine milk curds on the tongue or mucous membrane, appears, a saturated solution of boracic acid should be used as a cleansing agent after each feeding. This is best applied by wrapping the finger with absorbent cotton, dipping it in the solution, and washing out the mouth.

It is exceedingly important that the milk-teeth should have daily care, since dirty teeth cause bad breath, indigestion, and if not carefully watched are sure to become decayed, with resulting neuralgia and bad breath, making in time an unhealthy child.

Decayed teeth should be filled, when possible, with a soft filling. If this is not possible, they should be pulled. A child should be taken to a dentist once every six months. The teeth should be cleansed with a soft brush and a simple tooth powder, such as precipitated chalk, once every day.

Oil Wintergreen	3 drops
Boracic Acid	½ dram
Precipitated Chalk	1 ounce

APPEARANCE OF THE TEETH

There are twenty milk-teeth, and the time at which they appear varies considerably even in a normal child.

Some few children are born with a tooth, some get them at the fourth or fifth month, and some not until the tenth month.

The average time of teething is as follows:

Two lower incisors	6 to 9 months
Four upper incisors	8 to 12 "
Two lower lateral incisors and four anterior molars	12 to 15 "
Four canines	18 to 24 "
Four posterior molars	24 to 30 "

At 1 year a child should have 6 teeth.
At 1½ years a child should have 12 teeth.
At 2 years a child should have 16 teeth.
At 2½ years a child should have 20 teeth.

Before the tooth appears the gum becomes somewhat reddened and inflamed, there is some salivation of the mouth, and the child is often fretful. Children that have been properly fed from birth rarely have any difficulty in cutting their teeth, but in cases where the milk has not been properly adapted, difficult dentition is apt to follow, with the accompanying symptoms of fretfulness, slight fever, indigestion, and sometimes diarrhœa. When the gum is red, and swollen around a coming tooth, the spot should be rubbed with a coarse towel held over the finger to break the mucous membrane, but the gum should not be lanced.

Rickets is the commonest of all causes of delayed teething, and children with rickets are very late in teething.

MILK IN INFANTS' BREASTS

Mothers are often very much worried by the appearance of milk in an infant's breast (sometimes in quite large quantities), causing marked bulging of the breasts. In each case no attempt should be made to squeeze the milk out, as by so doing serious injury may be caused.

I have had a number of cases brought to me where the breasts have been thus tampered with, and an abscess of the breast resulted which required a surgical

operation and was even a menace to the child's life.

Infants with milk in the breasts should have a snug bandage applied over the breasts, and no other treatment except as advised by a physician.

HOW TO LIFT THE BABY AND YOUNG CHILD

Every one who has anything to do with a baby should know the proper way of lifting it in order to avoid injury. One hand should be placed under the buttocks and the other hand and arm at the back of the head, neck, and shoulders; there then is no danger of straining the back or injuring the extremities. Premature or very delicate children may be laid on a pillow and carried about in that way. Children of the runabout age, when lifted from the ground, should be taken with both hands about the body just under their armpits. They should never be lifted by one arm, as unfortunately is too often carelessly done by nurse-maids, nor should a child ever be lifted by the ears or head. I knew of one child that was made a cripple for life by being lifted by the head.

THE HEALTHY BABY

In order to appreciate what constitutes illness, or failure to grow, it is necessary to know what to look for in the healthy child. First of all, the great function of the child is to grow, as steady growth is essen-

tial to health. The gain in weight should be from five to eight ounces a week, the flesh should be firm, the eyes bright, and the skin clear.

There should be two or three soft yellow stools each day. The child should be hungry at feeding time and take the breast or the bottle eagerly when it is offered, or cry lustily when it is long delayed past the proper time, but should be satisfied and contented when fed, and when nursing is finished should usually fall asleep. Healthy babies may cry from other causes besides hunger, such as the prick of a pin, too tight clothing, or transient pain of any kind. The process of dressing or undressing, or the sight of strangers, may cause them to cry. The healthy baby should sleep quietly and awaken bright and refreshed.

After the second month, the healthy, normal child begins to notice things and people, and is attracted by toys, bright objects, or noises. From the third to the fifth month it should hold its head erect without support. From the seventh to the tenth month it should be able to sit alone, and at this time teething begins. At the fifth or eighth month the child should begin to creep on all-fours, and by the tenth month should make attempts to stand. From the twelfth to the eighteenth month it learns to walk, and by the seventeenth month will usually walk alone. When a baby is born it is usually deaf for about four days. The hearing gradually develops so that by the fourth or fifth week this sense is very acute and loud noises disturb the child. The sense of taste also gradually develops from the first week up to the sixth month,

though by the fourth or fifth day the child can distinguish between sweetened or unsweetened milk. After the tenth month a child will remember the face of a parent after a short absence, and after the twenty-first or twenty-second month will remember persons who have been away for some time.

Children vary as to the time when they begin to talk, but generally they should be able to say " papa " and " mama " by the twelfth to the fourteenth month, and should formulate short sentences by the twenty-fourth month.

Healthy children vary within certain limits as to weight and height. During the first two or three days following birth a baby frequently loses from five to seven ounces, but usually by the seventh day this loss is made up. However, when the baby is placed at once at the breast there may be little or no loss. Up to the fourth month a child gains nearly an ounce a day, or from one and a half to two pounds a month. An infant should double its weight in five months. From the fourth to the twelfth month there should be a gain of from one-half to two-thirds of an ounce each day, or about a pound a month, and at the twelfth month a baby should have trebled its birth weight.

The well-nourished child should grow about eight inches the first year, which would be on an average almost three-fourths of an inch a month. During the second year the growth is not so rapid, about four inches, or about one-third of an inch on an average a month, while the weight increases about twelve ounces per month.

When a child does not gain at the rate of an average of a pound a month during the first year, and three-quarters of a pound a month the second year, presumably the food is at fault.

Every baby under one year of age should be weighed

The Healthy Child Fourteen Months of Age.

once a week, and those who are having a change in diet because of failure to grow, as well as weak and delicate children, should be weighed several times a week. When a child is gaining at the rate of six or eight ounces a week we may have no fear, but where

the gain is only four or five ounces careful watching and frequent weighing are desirable, even though the child seems perfectly healthy.

The gain in weight is always considerably less during the summer months than in cooler weather, and not infrequently there is scarcely any gain during midsummer.

SCALES FOR WEIGHING

The most satisfactory scales to buy are the ordinary grocers' scales, with the scoop for weighing small babies, and the platform for older children.

These scales weigh in ounces, so that accurate weight may be obtained no matter what the size of the child. Some prefer to get the little spring and basket scales to weigh the baby. These weigh in ounces up to twenty-five pounds and are all right for the first year, but will not do for older children.

SLEEP

A young infant in health should have quiet, peaceful, but not deep, sleep during the first month of its life. The sleep of childhood after the third year *is* deep. For the first few weeks an infant should sleep from twenty to twenty-two hours out of the twenty-four, waking only to take its food. If it has pain, or is uncomfortable from too tight clothing, or too many covers, or from any other cause, such as hunger or indigestion, of course its sleep will be disturbed. Dur-

WEIGHT AND HEIGHT OF THE WELL CHILD FROM BIRTH TO THE SEVENTH YEAR *

AGE	SEX	WEIGHT POUNDS	HEIGHT INCHES
Birth	Boys	7.55	20.6
	Girls	7.16	20.5
6 months	Boys	16.0	25.4
	Girls	15.5	25.0
12 months	Boys	20.5	29.0
	Girls	19.8	28.7
18 months	Boys	22.8	30.0
	Girls	22.0	29.7
2 years	Boys	26.5	32.5
	Girls	25.5	32.5
3 years	Boys	31.2	35.0
	Girls	30.0 35	35.0 36½
4 years	Boys	35.0	38.0
	Girls	34.0	38.0
5 years	Boys	41.2	41.7
	Girls	39.8	41.4
6 years	Boys	45.1	44.1
	Girls	48.8	43.6
7 years	Boys	49.5	46.2
	Girls	48.0	45.9

* From L. E. Holt's "Diseases of Infancy and Childhood,"

ing the first six months a healthy child ought to sleep from sixteen to eighteen hours, waking every two or three hours during the day, and remaining awake from half an hour to an hour at the time it takes its food.

At night an infant should have a period of five or six hours of uninterrupted sleep, and after about the fifth month there should be no feeding between 10 P.M. and 7 A.M. When a child has reached the age of one year it should sleep fifteen hours during the twenty-four, twelve hours at night and three hours during the day, having a nap in the morning and one in the afternoon. During the second year one nap of a couple of hours is usually sufficient, but the night rest should be of twelve hours duration. A child four years of age should have twelve hours of sleep. From the sixth to the tenth year eleven hours, and from the tenth to the sixteenth at least nine hours, are necessary.

The daily nap should be kept up until the fourth or fifth year, and in delicate children to the seventh year or longer.

An infant should be trained from birth to go to sleep when placed in its crib. It should never be allowed to go to sleep at the breast, or with the nipple of a bottle, or any other device in its mouth.

If the child is awakened at regular feeding intervals during the day, and allowed to sleep as long as possible during the night, this will do much to establish regular habits of sleep, make the child less care to its mother, and help to insure good health.

An infant should never be rocked to sleep, but should be placed in its crib after nursing, care being taken that its diapers are dry and its condition warm and comfortable, and that the room is darkened. This should represent all that is necessary to bring peaceful quiet sleep to the healthy child.

EXCESSIVE SLEEP

Either one of two causes may bring about excessive sleep: some organic disease of the brain, or the use of certain drugs.

Opium, usually in the form of a "soothing syrup," or paregoric is, in most cases, the drug that is given. Excessive sleep should arouse the suspicion at once, and, if investigation shows this drug has been given, the child should be taken into the fresh air, kept awake, and the doctor sent for, as serious consequences may result.

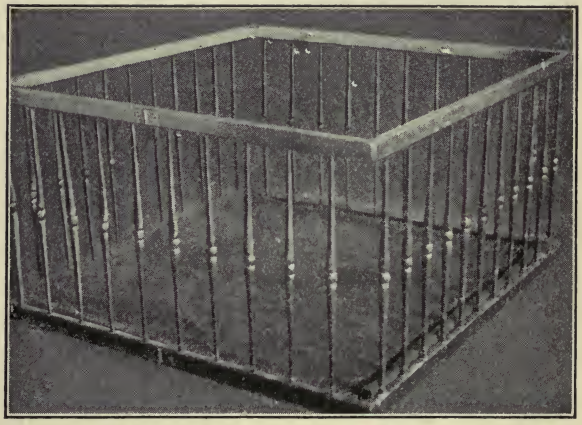
EXERCISE

A young infant should be placed on a large bed or mattress each day for an hour, with nothing but a loose shirt and diapers on, where it is allowed to kick its legs and wave its arms, and so get exercise which strengthens the muscles and improves the appetite.

The child also gets exercise from crying.

After the eighth month and up to the second year, when the child begins to creep and walk, it will require

less watching and will also be safe from cold floors, draughts, and the danger of falling downstairs or being otherwise injured, if it plays and gets the exercise—which is so important—in the exercise pen.



The Exercise Yard or Pen.

The " pen " consists of a fenced-in enclosure about four feet square, with a bottom made from blankets or a mattress, and is so constructed that it can be folded up and easily carried from place to place.

Older children should be encouraged to take every form of outdoor exercise.

Delicate children should have their exercise regulated, and it should never be allowed to go far enough to produce a state of exhaustion.

AIRING

In the summer it is not only perfectly safe to take a baby a week or ten days old out-of-doors, but it should be kept in the air as much as possible during the day when the weather is good, taking care to protect it from the sun, wind, and flies. In the spring and fall it is best not to take a baby out before it is a month old, and, then, only when the weather is mild. At first the outing should be for half an hour, then gradually lengthening the time to two or three hours as the child becomes accustomed to the out-of-door air.

Babies that are born in the late fall or winter can be given an indoor airing by dressing them in their outdoor garments and opening the windows of the nursery.

By the time a child is four or five months old it can be taken out for its daily airing with benefit, even in winter, if properly protected from the cold; except during very severe or windy days, or when the air is damp by reason of melting snow.

THE BABY TENDER

This consists of a light, but strong, wooden frame supported on castors, as shown in the illustration of the Glascock baby walker. To the top or body ring is attached an adjustable saddle, and the whole weight of the child is supported by steel springs,

thus allowing the child's feet to touch the floor. A baby five or six months old will at first use it as a jumper, but before very long, in its efforts to walk,

The Glascock Baby Walker.

it will push it about the room. The baby tender allows the child to sit or stand, walk or jump, the weight of its body being supported by the springs. This enables the baby to get proper exercise, strengthens the legs, and avoids the danger of its becoming bow-legged. While the baby tender is a valuable help

in the nursery, it should not be abused. Care should be taken that the child is not left in it long enough to become tired, and that it is not used too often.

THE CRY

It is perfectly normal and necessary that the young infant should do a little crying each day. This exercises the muscles of the body, causes the child to breathe deeply, expands its lungs, oxygenates the blood, and stimulates the action of the bowels.

When crying is long and continuous, however, it becomes abnormal, and the cause should be looked into, and, if possible, remedied. Children may cry from pain, hunger, temper, fright, illness, or habit.

The cry of pain is loud and continuous, as in colic, earache, or difficult movements of the bowels.

The cry of hunger is that which comes at the regular feeding times when the food is withheld, and is at once quieted when food is given, and is not heard again until the next feeding time, unless the baby is not satisfied, when crying may occur again soon after nursing.

The cry of illness is peevish and whining, but it may be vigorous, and children that are painfully ill sometimes cry for an hour or two until they become quite exhausted and fall alseep.

There is nothing distinctive about the cry of fright, but it is usually loud and of short duration.

The cry of indulgence is easily distinguished, as it

is the practice of spoiled or badly managed children, who when left alone may cry vigorously until they are taken up and held in the arms, or walked with, talked to, or rocked; then the cry immediately ceases, and we know that pain or discomfort was not the cause.

When a baby cries at night it should be examined to see that it has not too many covers over it, or too few, or that its clothing is not too tight; it may be that a pin is pricking it or that it has a soiled diaper, or its hands or feet are cold, or it may have colic.

If none of these causes are present, the bottle of milk should be examined to see if it is sweet, as that may be at the root of the trouble.

TEMPERATURE

Under normal conditions the temperature of an infant or young child varies from 98° to 99.5° F. When fever is present the temperature of an infant is always higher than it would be in an adult from the same cause. Every mother should have a thermometer for taking the baby's temperature and know how to use it. The hand is not a reliable guide in judging the degree of temperature, as fever is not perceptible to this test below 101° or 102° F.

The thermometer should be first shaken down, then thoroughly greased with oil or vaseline and inserted into the rectum until the mercury is entirely out of sight, and left there for at least three minutes.

The thermometer cannot be successfully held in a baby's mouth, and the temperature taken from the axilla is very unreliable.

The family physician should show the mother how to use the thermometer and how to take the reading.

KISSING

Promiscuous and general kissing of babies and young children, as a practice, cannot be too strongly condemned. The contagious diseases—diphtheria, influenza, tonsillitis, tuberculosis, and syphilis—may be, and often are, transmitted in this way. For this reason kissing should be allowed only to the immediate family, and then only to those members who are in perfect health. Even under these circumstances a child should never be kissed upon the mouth or on the hands; the safest place is the forehead.

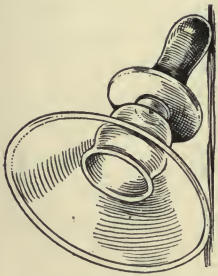
Older children should be taught to turn their cheek when strangers insist upon kissing them.

Servants and nurses should be warned never to kiss the child on penalty of dismissal.

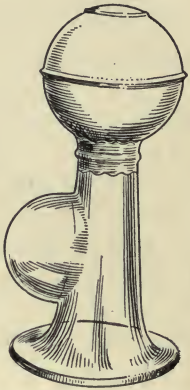
CARE OF THE BREASTS AND NIPPLES

When a mother first begins nursing her child the nipples are very often soft and tender, and have to be gradually hardened and accustomed to the office they are to perform. They should be washed gently

before and after nursing with a saturated solution of boracic acid. This is best done with a piece of absorbent cotton. Having thoroughly washed the nipples, vaseline may be applied on sterile gauze, and allowed to remain until the next nursing, when the



Nipple Shield.



English Breast-Pump.

nipples should again be washed with the boracic acid solution before the child is put to the breast. After a week or two the nipples will be toughened so that the vaseline may be discontinued.

Sometimes, usually from neglect, the nipples become cracked, in which case they are extremely painful. The baby should never be allowed to nurse a cracked nipple. A nipple shield should always be used. It may require some patience to teach the baby to take the breast in this way. It is very important that a

nursing mother should not allow her breast to become hard or in the least painful.

Not infrequently at first when the milk comes into the breast with a rush, as it often does, the young baby is not able to take it all, and to empty the breasts, in such cases the remainder of the milk left after the baby has nursed should be pumped out by means of the breast-pump. When hard lumps form in the breast frequent massage with warm sweet oil or vaseline usually gives relief, and prevents the formation of an abscess. In some cases, when the lumps in the breasts are large, the massage must be almost constant for hours, or even a whole day at a time, to alleviate the condition and avoid serious consequences.

While the breast shields are being used, and until the cracked nipples are entirely healed, the nipples should receive treatment between each nursing. They should be washed clean with the saturated solution of boracic acid, dried, and then equal parts of zinc oxide ointment and vaseline should be applied on soft old linen. This being removed, the nipple should be cleansed before each nursing with boracic acid solution or plain alcohol. Some mothers have large, pendulous, and flabby breasts, in which case a wide bandage about the breasts will support them and afford great comfort.

MATERNAL NURSING

Every mother in good health should nurse her own child, when possible, if only for a few months, for

she is thus giving her child the best chance of development. It is not only better for the mother, but it may be the means of saving the baby's life; for there is no artificial food that is "just as good" as good mother's milk, or that can be modified to simulate it exactly.

A great many well-to-do mothers who could do so are not willing to nurse their babies for social reasons. Many mothers of the poorer class take the same course because they must go out to work.

Through an investigation by the Department of Health, in 1907, into the methods of feeding, 25,865 babies under nine months, and 34,692 babies over nine months and under twenty-four months, showed the percentage of breast-fed was large; 81.15 per cent of infants under nine months being thus nourished, while only 18.85 per cent were artificially fed. These 18.85 per cent of artificially fed infants supplied 57.53 per cent, or over one-half, of all the cases of diarrhœa which occurred in this age group during the year.

We may therefore say in round numbers that a child has six times as great a chance of being afflicted with summer diarrhœa when fed on artificial food as when it is breast-fed.

Of the total number of children who died of diarrhœa under nine months old 25.04 per cent had been breast-fed, while 74.96 per cent, or three times as many, had been artificially fed.

Of the children over nine months of age, 23.72 per cent were breast-fed during their first year, while

76.28 per cent of the deaths occurred in children who had been artificially fed.

Condensed milk-fed babies had a larger death rate than babies fed by any other artificial food.

A child who is fed by the mother stands a much better chance in a fight with disease than one who is bottle-fed.

For instance, in New York City about 5,000 babies die each year of diarrhœal diseases, about 3,750 being the artificially-fed infants.

There are many mothers who cannot nurse their babies, and others who should not be allowed to do so; among these last may be mentioned consumptives and those who have an hereditary tendency to tuberculosis. Women who are pale, anæmic, or delicate make poor wet-nurses. Very old or very young mothers, or those who have borne many children, are apt to have a poor milk supply.

Women between the ages of twenty and thirty-five make the best wet-nurses. Nervous and impressionable women, or those who worry, are failures at nursing. No woman should nurse her child after she has become pregnant again, but menstruation is not a contra-indication to nursing.

A nursing mother should not worry, or have cares, if it is possible for her to avoid them. In order to nurse her child successfully she must be happy and contented. Six or eight hours after the baby is born the mother's nipples should be washed with a saturated solution of boracic acid, and after they have been dried and moistened with alcohol the baby should be

put to the breast. This will gradually prepare the breasts and nipples for the milk—which will appear in from forty-eight to seventy-two hours afterwards—and will accustom them to their new use. Then when the milk does come the baby and the nipples will be in readiness for it. Until the milk appears the baby may be given sugar-water, which is made by adding two teaspoonfuls of milk-sugar to half a pint of boiled water, or plain unsweetened, boiled, or filtered water. One-half to one ounce should be given every two or three hours.

It is always well to accustom the child to taking its food at regular intervals; and between 11 P.M. and 6 A.M. there should be only one nursing.

A child should gain at least four ounces each week: most babies gain from six to ten ounces. In order to keep in touch with the child's condition, weekly weighings should be made. There are other ways, however, of determining whether or not the baby is thriving. If a baby is nursed at proper intervals, and the milk is of good quality and sufficient in quantity, after nursing for fifteen minutes it should seem satisfied, and sometimes appear drowsy, or fall asleep. When the nursing time again comes, the baby should be hungry and restless, crying if its feeding is delayed, and should take the breast eagerly when it is offered.

On the other hand, a child who does not get sufficient nourishment, either because the milk is poor in quality or insufficient in quantity, or for any other reason does not agree with it, remains longer at the breast—say from one-half to three-quarters of an hour—and

an hour after feeding, or less, seems to be very hungry. Fretting and crying to be nursed frequently day and night, and appearing altogether very uncomfortable, it ends by getting the reputation of being a very cross baby. In this condition there is always more or less colic present, frequently constipation or diarrhœa, with green stools containing mucus, and vomiting may occur.

Little or no gain in weight is made, and not infrequently there is a decided loss, and the child looks pale and delicate.

A chemical examination of the mother's milk will determine correctly in what it is deficient, and then the physician will be able to treat the mother intelligently so that the quality of her milk may be improved. Milk that is normal should be of a bluish white color, and upon standing for twelve hours in a bottle or narrow glass should have a firm layer of cream on the top.

If the creams forms in flakes it is a sign that the milk is deficient in fat. In every case where the child is not thriving there should be special treatment. The mother herself can do much to improve her milk by following out certain rules. She should try to keep herself free from worry and care, should sleep at least eight or ten hours out of the twenty-four, should be in the open air, if possible, for three or four hours each day, and her bowels should move once daily. The diet of the nursing mother should be plain but substantial, consisting of bread and butter, soup, vegetables, milk, cream, cereals, stewed

and ripe fruits, rare lean meats, poultry, fish, cocoa, chocolate, one cup of coffee daily, and plain cake. Tea and all highly seasoned and rich foods, sauces, puddings, pies, should be avoided.

It must be remembered that a sudden fright, great joy, or other unusual mental impression, will often act as a shock to the mother, and so affect her milk as to bring on an attack of vomiting or diarrhœa in the child.

It is a wise thing to begin early to give the baby one bottle-feeding each day and accustom it to taking the bottle. This will allow the mother greater freedom for recreation, permitting her to visit friends, do shopping, go to the theater, take short trips, etc., and if she is ill the baby will not suffer.

The food formula used should correspond to the age of the child, as designated under the heading of artificial feeding. From one to two bottle-feedings will probably be necessary by the seventh month, but should the milk supply fail before that a bottle-feeding may be given every third or every second feeding. So long as the child may be nursed to advantage it should not be weaned, but if it is found that the mother cannot give the breast three times a day, then the child should be put entirely upon the bottle and completely weaned from the breast.

NURSING FOR TWENTY-FOUR HOURS

First week	10 feedings
First week to fourth week	9 feedings
Fourth week to tenth week	8 to 9 feedings

Tenth week to fourth month ..... 8 feedings
Fourth month to fifth month ..... 7 feedings
Fifth month to seventh month .... 6 to 7 feedings
Seventh month to ninth month ... 5 to 6 feedings
Ninth month to twelfth month .... 5 to 6 feedings

THE WET-NURSE

Where other methods of feeding have failed a wet-nurse is indispensable.

In the selection of a wet-nurse, a woman between the ages of twenty-one and thirty-five should be chosen. The peasant women of Europe—German, Austrian, or Russo-Polish—make the best wet-nurses. Before the wet-nurse is taken into the family she should have a thorough medical examination to see that she is free from all skin diseases, tuberculosis, syphilis, or other infectious or contagious disease.

One of the best indications that the wet-nurse has a good supply of milk is that her own baby is well nourished. It is not necessary that the age of the wet-nurse's baby be the same as that of the patient for whom she is to supply milk; breast milk from a month to three months will be right for any infant.

It should be remembered when taking a wet-nurse that she has left her own baby and is living amid entirely different surroundings. It is, therefore, not surprising if, for the first few days, her milk should cause some colic or slight disagreement, so that we should not be too quick to arrive at the conclusion that she will not do in a given case. The wet-nurse

has probably been used to a simple diet and plenty of exercise, so she should be given plain food, such as meat, poultry, vegetables, cereals, fish, and milk, with one cup of coffee, and not more than two cups of tea, daily. Her bowels should move at least once a day. She should spend three or four hours out-of-doors each day, and during the time that she is not busy with the baby she should be occupied either with sewing or some light housework. The baby should receive one bottle-feeding each day, so in case the wet-nurse is ill or suddenly leaves, the child will not suffer until another wet-nurse can be procured.

Usually by the seventh month the wet-nurse can be dispensed with and the baby put entirely upon the bottle, except in the summer, when it might be wise to retain the wet-nurse somewhat longer.

WEANING

When it has been decided to wean the child the process should always be gradual, when this is possible, for sudden weaning is bad for both mother and child, as it may cause an acute attack of indigestion or diarrhœa.

While it is better *not* to wean the child during the summer, still the breast nursing should not be unduly prolonged on this account. Many women among the lower classes are able to nurse their babies up to the ninth month, and some can do so to the twelfth month with advantage. Among the more fortunate classes,

however, few mothers can nurse their babies beyond the seventh or eighth month, while still a smaller number can continue to do so beyond the ninth or tenth month without injury to both mother and child. Before the sixth or seventh month the best guide when to wean is the child's weight. If there is no evident disease and the weight is stationary for several weeks, it is advisable to wean. Where there is a steady loss in weight weaning is absolutely necessary.

If the child has been accustomed to take one or two bottles from birth, it is an easy matter to wean by gradually adding one more bottle each day in place of a breast feeding; until in the course of a week the baby is weaned entirely from the breast.

In case of any acute disease of a serious nature in the mother, or in case of a grave chronic disease, the child must be suddenly weaned, in which case the food given should be much weaker than that ordinarily given to an artificially-fed infant of the same age. For instance, a child of six months should receive the formula proper for a three-months child, or a child of nine months that ordinarily given to a six-months child. After the baby has become accustomed to the new diet, the food can be gradually increased in strength.

SUBSTITUTE FOR BREAST MILK—ARTIFICIAL FEEDING

Every year thousands of infants are born, who, for some reason, cannot have the advantage of breast-

feeding, and so other means of nourishment must be supplied. Proprietary foods and condensed milk make exceedingly poor substitutes for human milk, and unfortunately a wet-nurse is possible to but few. In selecting a milk suitable for the child we must be guided by nature, and furnish a food as nearly as possible like the mother's milk. This can be accomplished only by the use of cow's milk. The average good cow's milk (from a mixed herd) contains approximately 4 per cent of fat, 3.5 per cent of protein (curd), 4 per cent of sugar; while human milk contains on an average approximately 3.5 to 4.5 per cent of fat, 1.5 per cent of protein, and 6.5 to 7 per cent of sugar. Thus cow's milk contains more protein and less sugar than mother's milk.

In order to make cow's milk simulate as closely as possible mother's milk, it should be first diluted with water to decrease the percentage of protein, and then sugar and cream should be added to increase the sugar and fat to the required percentage. This process is called modifying. The " modified " milk must be adapted to each individual child, taking into consideration its age and peculiarities. One child may be able to take a much higher percentage of protein, or a higher percentage of fat, or more milk at a feeding, than another of the same age, and may require a stronger food to thrive. It should be remembered that the protein of cow's milk is less easily digested than mother's milk, as it forms larger and tougher curds in the stomach

The fat of cow's milk is frequently not well assimi-

lated and must be given in smaller quantities than is present in mother's milk. The mistake is often made of giving the milk too strong at first; this causes vomiting, diarrhœa, or constipation, and frequently colic.

The child does not thrive, and it is argued that the milk does not agree with it and that some food other than cow's milk should be used, when really the fault is not with the kind of milk but with the manner in which it is given.

In using the formulæ given, it should be understood that they are suitable for the average child, in fair health, but of course it would be impossible to give any formulæ suited to every case, since a formula that might agree perfectly with one child of a given age might not be adapted at all to another, or a formula that one child would thrive upon might be too strong or too weak for another child of the same age. We see then that the milk food has to be adjusted to each individual case, not only in quantity but also as to the ingredients of which it is composed. Chemical analysis has shown that the upper sixteen ounces of a quart bottle of good milk, after standing in a cool place for four or five hours, contains about 7 per cent of fat, 3.2 per cent of sugar, and 3.2 per cent of protein. Gravity cream contains about 16 per cent of fat. We make use of this knowledge to modify the milk.

The physician should adapt the milk to the digestion of the child. Some children six months old may thrive on a milk ordinarily suitable for children of eight or ten months, and, on the other hand, children six

months old may require milk ordinarily given to children three or four months of age.

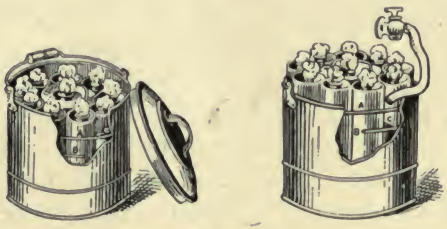
There are occasionally babies who cannot take cow's milk, no matter how modified. In such cases, the child has probably been badly fed from the beginning, too strong cow's milk having been given, and when this was found to disagree some one of the proprietary foods substituted. Such difficult cases require the constant care and watchfulness of both physician and mother. Milk for a time must be stopped, and various substitutes used, such as whey, barley-gruel, broths, diluted cream, malt soup, one of the malted foods, or condensed milk. After a time one feeding of much diluted cow's milk may be substituted, and if it agrees the number and strength of the milk feedings can be very gradually increased. In some cases the digestive organs are so hopelessly upset that a wet-nurse is the only means of saving the child's life.

When, on account of low power of protein digestion in the child, the milk is given very much diluted, it may be of advantage to add a half-tablespoonful to two tablespoonfuls of beef juice to each bottle feeding, according to the age and capacity of the child.

In exceptional cases the milk-sugar is not well borne, and cane-sugar or maltose may have to be used instead; but in much smaller quantities, on account of being so much sweeter.

STERILIZATION AND PASTEURIZATION OF MILK

Sterilized milk is milk that is heated to the boiling point, 212° F., and kept at that temperature for twenty minutes. Pasteurized milk is milk that is heated to a temperature of 140° to 145° F., and kept at this tem-



Freeman Pasteurizer.

perature for twenty minutes, when it is quickly cooled by placing it on ice.

Sterilization destroys all pathogenic bacteria, but it also produces a peculiar taste and destroys certain nutritious properties. It is somewhat less easily digested, and frequently causes constipation if given for a long period.

Sterilized milk used alone continuously for a long time is apt to produce rickets, or scurvy. Babies taking sterilized milk should receive orange juice daily to prevent these diseases. Among the poor and the ignorant in the cities, where ice is not available, sterilization of the milk is advised from May 1st to October 1st; but during the other eight months of the year the milk should be given raw. In some infants the

continued use of sterilized milk will cause malnutrition and stationary weight.

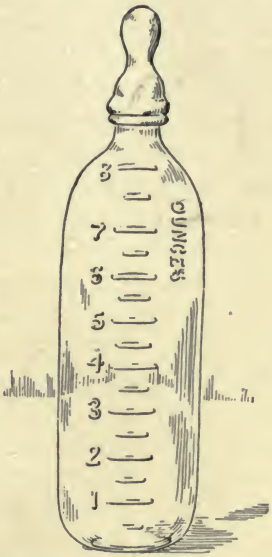
Pasteurization interferes less than sterilization with the nutritive value of the milk and at the same time kills most of the pathogenic bacteria; it is, therefore, a valuable means of preserving the milk during hot weather, has not the disagreeable effect of changing the taste, and will not cause constipation. The best method of pasteurizing is by means of the Freeman Pasteurizer. If for any reason this pasteurizer cannot be used, the milk may be heated over a slow fire in a double boiler or agate basin, to the desired degree, then poured off into as many bottles as there are feedings—with absorbent cotton placed for stoppers in each bottle—cooled in cold water, and kept in a cool place, or an ice-box, if possible, till time of using.

During the hot months, pasteurization is a wise procedure, except among those who are fortunate enough to live near their source of milk supply and know that the milk is perfectly clean and can be obtained before it is more than a few hours old. People so situated may use the raw milk the year round without danger; but when the source of the milk is not known and it is from twenty to thirty-six hours old before reaching the consumer, it will be better pasteurized unless the high-priced certified milk is used.

THE CARE OF BOTTLE AND NIPPLE

There is a great variety of nursing-bottles on the market, but none of them are so good as the graduated, oval bottle of eight ounces capacity.

This bottle, on account of its rounded corners, is easily kept clean, will fit in the ordinary pasteurizer



Nursing-Bottle and Nipple.

or sterilizer, and, if broken, is easily replaced. As many bottles will be needed as there are feedings in the twenty-four hours.

Milk bottles are best cleansed by first rinsing with

cold water and then washing with hot soapsuds and a bottle-brush, care being taken that the brush is always clean. Then the bottles should be rinsed in an abundance of clean, flowing water, and examined to see that no cloudiness or speck of milk remains. After this they should be placed in a rack and put in a moderately hot oven, where they should remain for an hour, which renders them sterile and again ready for use. Before removing the bottles the oven door should be opened for a short time, so that they will not crack from the sudden change of temperature.

Another method is to place the bottles over the fire in a boiler of cold water, and allow them to boil for half-an-hour, when they should be carefully drained and kept from all dust. The first of these two methods will be found preferable.

After the baby has been fed the empty or partially emptied bottle should not be allowed to stand, but should be emptied directly and rinsed with cold water, and later the entire number of bottles washed again, as already described. Under no circumstances should a warmed-over bottle of milk be given.

The nipples should be of the plain black seamless variety, rather small in size, as these do not collapse and can be easily turned inside out and thoroughly cleaned with a brush. One-half dozen should be kept on hand. Each nipple should be boiled once a day and dipped in boiling water just before using. After the nipples are cleansed they should be kept in a covered jar or box, or wrapped in a clean linen cloth.

MILK MODIFICATION

The following milk formulæ will be found suitable for the majority of healthy infants; where these modifications do not agree with the child the milk should be especially adapted to its individual digestion.

One quart bottle of milk is needed each day for the first five months; after that time two one-quart bottles will be required.

It is of great importance that a good milk be purchased, and I always advise one of the brands certified by the New York Milk Commission, when it is obtainable. For those living in the suburban towns, in the country, or in other states, where certified milk is not obtainable, the cleanest and freshest milk that can be had should be used. Those who are fortunate enough to have cows will, of course, use milk from their own herd. Rules regarding cleanliness, immediate rapid cooling, and icing of the milk we find obtain in creameries and large dairies which supply the city. Many people in the smaller interior villages are obliged to get their milk from farmers whose dairies are not under rigid inspection. These dairies may have tuberculous cows, the dairymen may be careless and uncleanly about the milking, the milk may not be cooled immediately, and the dairymen may not have the facilities or ice for keeping it cool until it reaches the consumer, consequently germs may multiply rapidly. Such milk is fraught with danger, and, in many cases, with disastrous results to the baby using it. People who are not sure of the cleanliness

of their milk supply would do well to inspect and investigate personally its source. If it is found that cleanliness, sanitation, cooling, and icing are not carefully observed, it would be well to seek a reliable milk supply nearer home, where the milk can be delivered to the consumer more promptly, and, also, properly iced. When it is impossible to secure milk iced before delivery, it is advisable to pasteurize the milk during the summer months—for instance, from May 1st to October 1st.

Chapin Dipper.

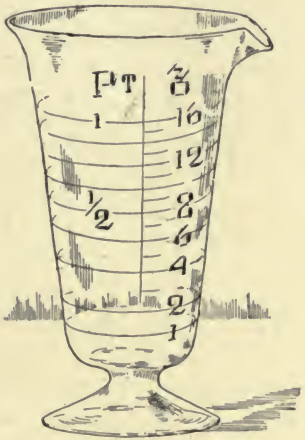
In the modification of milk from one cow, used for infant feeding, it should be remembered that the milk from a Jersey is much richer in butter fat than the milk from other breeds, or from a mixed dairy. Most Jersey milk contains from five to five and a half per cent of fat, and the gravity cream from such milk contains twenty to twenty-two per cent of fat, so that allowance must be made for this fact by greater dilution in the modification of the milk.

As a rule, the most expensive milk will be found the best and cheapest in the end, and the mixed milk from a herd of graded cows is preferable to that from one cow.

As soon as the milk is delivered, which is usually about six or seven o'clock, it should be placed in the ice-chest and allowed to stand for four or five hours; by that time the cream will have risen. The milk is then ready to be modified. From the quart bottle of

milk dip off the upper half, or sixteen ounces, into a cream bowl, using a Chapin dipper; from this "top milk" the required number of ounces are taken for each formula.

After the fifth month it will be necessary to mix the upper half of two bottles, and from the seventh



Pint Graduate Measure.

to the twelfth month the upper twenty ounces are used in order to obtain the required number of ounces of top milk.

The milk-sugar should be dissolved in hot water before adding to the milk. The cream at the top of the bottle is known as gravity cream.

The upper portion of the cream in the bottle is richer in fat than that which is nearer the milk, and

for that reason, in order to obtain a uniform strength of fat, all the cream should be dipped from the bottle and placed in a pint graduate or cream bowl, where it is thoroughly mixed before using to modify the milk.

TOP MILK FORMULÆ

First Week

One quart bottle of milk needed, of this the upper 16 oz. are mixed. Of this "top milk" take:

		APPROXIMATE PERCENTAGE EQUIVALENT
Top milk	2½ oz.	
Lime-water	½	Fat 1.1
Milk-sugar	1	Sugar ... 6.7
Boiled or filtered water to make	15	Protein .. .5

10 feedings in 24 hours, 1 to 1½ oz. at each feeding; 2 night feedings, 10 P.M. and 7 A.M.

2 level tablespoonfuls granulated sugar equals 1 oz.
3 level tablespoonfuls of milk-sugar equals 1 oz.

From Eighth Day to Fourth Week

The upper 16 oz. of a quart bottle are mixed, and of this "top milk" take:

		APPROXIMATE PERCENTAGE EQUIVALENT
Top milk	8 oz.	
Lime-water	2	Fat 1.86
Milk-sugar	1¾	Sugar .. 6.9
Water to make	30	Protein . .85

9 to 10 feedings in 24 hours, 2 to 3 oz. at each feeding; 2 night feedings, 10 P.M. and 7 A.M.

From Fourth to Tenth Week

The upper 16 oz. of a quart bottle are mixed, and of this "top milk" take:

		APPROXIMATE PERCENTAGE EQUIVALENT	
Top milk	11 oz.		
Lime-water	2	Fat	2.4
Milk-sugar	2	Sugar	7.1
Water to make	32	Protein	1.1

8 to 9 feedings in 24 hours, feed every 2½ hours; 2½ to 3½ oz. at a feeding; 1 night feeding.

From Tenth Week to the Fourth Month

The upper 16 oz. of a quart bottle are mixed, and of this "top milk" is taken:

		APPROXIMATE PERCENTAGE EQUIVALENT	
Top milk	13 oz.		
Lime-water	3	Fat	2.8
Milk-sugar	1¾	Sugar	6.8
Water to make	32	Protein	1.3

7 to 8 feedings in 24 hours of 3 to 4½ oz. each,* feed every 2½ to 3 hours; 1 night feeding.

From Fourth to Fifth Month

The upper 17 oz. of a quart bottle are mixed, and of this "top milk" is taken:

* If 4½ oz. are given at a feeding, 14 oz. of top milk, 2 oz. of milk sugar, 3 oz. of lime water, and water to make 36 oz. should be used.

		APPROXIMATE PERCENTAGE EQUIVALENT
Top milk	17 oz.	
Lime-water	4	Fat 3.0
Milk-sugar	2	Sugar ... 6.9
Water to make	38	Protein .. 1.4

7 feedings in 24 hours, feed 4½ to 5 oz. every 3 hours; 1 night feeding.

From the Fifth to the Seventh Month

Two one-quart bottles will be needed. 16 oz. of "top milk" are removed from each bottle and mixed.

		APPROXIMATE PERCENTAGE EQUIVALENT
Top milk	23 oz.	
Lime-water	4	Fat 3.8
Milk-sugar	2	Sugar .. 6.8
Water to make	42	Protein . 1.75

6 to 7 feedings in 24 hours, 6 to 7 oz. every 3 to 3½ hours; no night feeding.

From the Seventh to the Ninth Month

Two one-quart bottles of milk needed. Top 20 oz. from each, mix, and take of this "top milk":

		APPROXIMATE PERCENTAGE EQUIVALENT
Top milk	30 oz.	
Lime-water	5	Fat 3.7
Milk-sugar	2¼	Sugar .. 7.
Water to make	48	Protein . 2.25

5 to 6 feedings in 24 hours, 6 to 8 oz. at a feeding, feed every 3½ hours; no night feedings.

From the Ninth to the Twelfth Month

Two one-quart bottles of milk needed. Take top 20 oz. of each and mix; of this "top milk" is taken:

		APPROXIMATE PERCENTAGE EQUIVALENT	
Top milk	36 oz.		
Lime-water	5	Fat	4.
Milk-sugar	2½	Sugar	7.
Water to make	54	Protein	2.4

Feed every 4 hours, 5 to 6 feedings in 24 hours, 8 to 9 oz. at a feeding; no night feeding.

In certain cases it may be desirable to give a milk formula with a lower percentage of fat and higher percentage of protein than is present in the top milk formula. This is done by using whole milk or top, and skimmed in place of the top milk alone, as is shown in the following formulæ. It has been found that skimmed, or bottom milk, contains about 1 per cent of fat, 3.5 per cent of sugar, and 3 per cent of protein.

Some babies thrive better on a higher percentage of protein or a lower percentage of fat in their food, while others seem to do better on the lower protein and higher fat diet as found in the top milk mixtures. So that we find that regulating the amount of food and adapting the strength of its different ingredients to the digestive capacity of the individual case constitutes the art of infant feeding and tests the skill and experience of the physician.

The following formulæ, made up from the whole milk, may be found useful for babies from the fifth

to the twelfth month who have poor fat digestion, especially during the summer, when fat is not so well digested.

WHOLE MILK FORMULÆ

From Fifth to Seventh Month

One quart bottle of milk should be mixed. Of this take:

		APPROXIMATE PERCENTAGE EQUIVALENT
Whole milk	26 oz.	
Lime-water	4	Fat 2.47
Milk-sugar	2	Sugar .. 7.
Water to make	42	Protein . 2.16

6 to 7 feedings in 24 hours, 6 to 7 oz. every 3 to 3½ hours; no night feedings.

From the Seventh to the Ninth Month

One quart bottle of milk.

		APPROXIMATE PERCENTAGE EQUIVALENT
Whole milk	32 oz.	
Lime-water	5	Fat 2.66
Milk-sugar	2¼	Sugar .. 7.
Water to make	48	Protein . 2.3

5 to 6 feedings in 24 hours, 6 to 8 oz. at a feeding, feed every 3½ hours; no night feeding.

From the Ninth to the Twelfth Month

Two one-quart bottles of milk needed, mix and take:

		APPROXIMATE PERCENTAGE EQUIVALENT
Whole milk	40 oz.	
Lime-water	5	Fat ..... 3.
Milk-sugar	2¼	Sugar ... 6.8
Water to make	54	Protein .. 2.6

Feed every 4 hours, 5 to 6 feedings in 24 hours. 8 to 9 oz. at a feeding; no night feeding.

Barley gruel, used as a diluent in place of plain water, breaks up the curd, and the proteins of the gruel are often more easily digested by babies than the proteins of cow's milk. The use of barley gruel is a convenient means of reinforcing a modified milk formula that is deficient in protein. Two level tablespoonfuls of barley gruel, or oatmeal gruel flour, to the quart of water contains approximately .24 per cent protein and 1.20 per cent carbohydrates. By increasing the strength of the gruel the percentage of protein and carbohydrate may be proportionately increased.

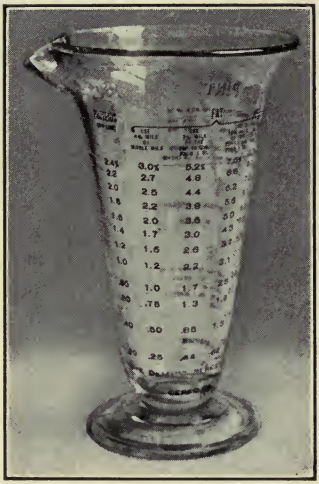
The Cereo Company of Tappan, New York, make an excellent barley and oatmeal flour. Robinson's patent barley flour is also much in use. These gruel flours are much to be preferred to the unground grain.

THE DEMING PERCENTAGE MILK MODIFIER

This is a sixteen-ounce graduate adapted for working directly with percentages in the home modification of cow's milk for infant feeding. The graduate has a column of figures in red which represent the percentages of protein, and several other columns which represent the percentages of fat. The fat percentages are obtained in the different columns by using four per cent milk (whole milk), seven per cent milk (the top sixteen ounces of a quart), twelve per cent (or the top nine ounces of one quart).

For four per cent milk shake the bottle to mix the cream and milk. To obtain fat-free milk dip off the cream and use the remaining skim milk.

The desired percentage of protein is found in the column headed protein; we follow this line to the right until the desired percentage of fat is found; at the head of this fat column the strength of the milk to be used is indicated. This milk is poured into the



The Deming Milk Modifier.

modifier up to the desired percentage of protein, and water or other diluents added to the top line, making sixteen ounces.

The percentage of sugar is the same as that of the protein, and for every level tablespoonful of granulated sugar or one and a half level tablespoonfuls of milk-sugar the percentage of sugar in the mixture will

be increased two and a half (2½) per cent. The "Chapin Dipper," containing one ounce, is necessary to dip off the top milk from a quart bottle.

Knitted Bag for Bottle.

In-a-Wink Heater.

The milk modifier is very convenient for home modification of milk when used under the proper guidance of the physician.

HOW TO HOLD THE BABY WHEN NURSING THE BOTTLE

When the bottle is given, the baby should be held in the lap of the mother or nurse, the head and body slightly raised to a semi-sitting posture. The attendant should hold the child with its head on her right arm, her left hand being free to hold the bottle up so that air is not sucked instead of milk.

The bottle should be encased in a knitted or flannel bag to retain the heat while the child nurses.

The Walker-Gordon " In-a-Wink " milk-warmer, with an alcohol or gas flame, is a convenient little heater to use for warming a single bottle, especially for the night feeding.

Way to Hold the Baby when Nursing the Bottle.

HOW TO HOLD A BABY WHEN NURSING THE BREAST

When nursing the breast the baby should be held in the mother's lap, and her knee on the side that the

baby is nursing should be slightly raised; with the thumb and forefinger of the hand on the same side

Way to Hold the Baby when Nursing the Breast.

she should grasp the breast and draw it forward, while with the other hand she should hold the baby's head to the breast.

SIGNS OF SUCCESSFUL ARTIFICIAL FEEDING

The signs of successful bottle-feeding are a steady gain in weight of from four to eight ounces a week;

two or three yellow stools daily; peaceful, quiet sleep; and the bottle taken at the regular intervals greedily. In other words, comfort and happiness.

The signs of unsuccessful feeding are loss in weight or very slight gain, vomiting, undigested green stools, discomfort after feeding, colic, restlessness, peevishness, and wakeful nights.

SIGNS OF SUCCESSFUL BREAST FEEDING

The signs of successful breast feeding are an average gain of five to eight ounces a week, two or three yellow stools a day, quiet sleep, absence of colic or vomiting, hunger at the regular feeding intervals—which hunger is satisfied after nursing for fifteen minutes at the breast until the next feeding period.

The signs of unsuccessful breast feeding are loss or very slight gain in weight, a tendency to remain long at the breast, and half an hour afterward to be peevish, crying, and seeming hungry; to sleep badly, and to have green stools, vomiting and indigestion, with colic.

PEPTONIZED MILK

Peptonized milk, although now rarely used, is no doubt of benefit in certain cases where the curd of even properly modified cow's milk cannot be digested.

In acute or chronic illness, where food cannot be

taken by the natural method on account of sore throat or paralysis of the throat, peptonized milk can be given through the stomach tube.

When stomach feeding is impossible on account of vomiting, or for any other reason a nutrient enema of peptonized milk may be given through the bowel.

The usual method of peptonizing milk is to add from one-eighth to one-quarter of the contents of a Fairchild peptonizing tube to the milk mixture in the nursing bottle; this is placed in water at a temperature of 110° F. to 120° F. for fifteen minutes.

CONDENSED MILK

No infant should ever be fed upon condensed milk alone for a long period, since, on account of the low nutritional value of the milk, sooner or later either the child's weight will remain stationary or symptoms of rickets or scurvy will develop.

The natural food is the mother's milk, which analysis shows to contain approximately 3.5 per cent to 4 per cent of fat, 1.5 per cent of protein, and 7 per cent of sugar.

In order to prepare condensed milk for feeding it should be diluted ten or twelve times, or even more, for infants under three months of age, and five or six times for those six months and older. Diluting condensed milk twelve times with water would make a solution containing approximately .7 per cent of fat, .8 per cent of protein, and 4.2 per cent of sugar.

Comparing this with mother's milk, we see it is very deficient in fat, and also, to a less degree, in protein.

Condensed milk is useful, however, in convalescence from diarrhœa, and in cases of very weak digestion.

For traveling, condensed milk is convenient, as it is easily prepared. Condensed milk is sometimes used to advantage among the poor and ignorant, especially during hot weather when ice cannot be obtained, since the milk keeps well and is quickly mixed.

If condensed milk is given for more than one or two weeks, top milk or cream should be added to give a greater percentage of fat.

For children over three months old barley gruel should be used as a diluent in place of water.

The following dilutions, as given by Dr. Kerley, are most suitable for the various ages.

Under Three Months of Age.—Condensed milk, one-half to one teaspoonful; water, two to four ounces.

Third to Sixth Month.—Condensed milk, one to two level teaspoonfuls; barley-water, four to six ounces.

Sixth to Ninth Month.—Condensed milk, three teaspoonfuls; barley-water, eight ounces.

The sweetened variety of condensed milk is always preferable as it keeps best, while the unsweetened soon becomes rancid after the can is opened. When condensed milk is used a teaspoonful of orange juice should be given three times a day.

PROPRIETARY FOODS

Proprietary foods should never be given to healthy babies. The only time when it may be permissible to use them is occasionally in cases of illness, as most of them are easy of digestion. They have very little nutritional value as compared with mother's milk or modified cow's milk. All of them are very deficient in animal fat and animal protein. Most of them contain a high percentage of sugar, so, when added to cream, milk, and water, they simply take the place of the sugar in the modified milk, the other nutritive elements being supplied from the cream and milk. When these foods are given, mixed only with water, they invariably produce, if taken for any length of time, either rickets or scurvy. They should, therefore, never be used except under a physician's directions, and only until a more substantial food can be digested.

DIET DURING ILLNESS

Even slight illness in infants and young children diminishes the power of digestion. On this account the food given them should be diminished in strength according to the severity of the illness.

If a nursing baby is taken ill, plenty of water should be given before each nursing, and the baby should be allowed only half the accustomed time at the breast. In case the patient is a bottle baby, half the contents of the bottle should be poured out and the same

amount of boiled water added before giving it to the child. Where the illness is less severe the dilution may be less. At the first symptom of summer diarrhœa all milk must be stopped at once, and the child fed as directed under the heading of diarrhœa.

Older children may be given broths and cereal gruels during a severe illness, together with all the water they want to drink.

MILK FOR TRAVELING

Ice-Box for Traveling.

When taking a journey it is essential that the baby's food should be as nearly as possible the same as that

to which it is accustomed. In order to secure this result the milk must be kept on ice.

The Walker-Gordon Company furnishes small ice-boxes which have room for a four days' supply. These boxes can be easily carried on boats or cars and kept supplied with ice by the porter. In making an ocean voyage still larger boxes may be supplied. These will hold a dozen quart bottles of milk, and may be kept in the cold-storage room.

Those who are unable to avail themselves of the ice-boxes may substitute condensed milk as indicated in the formulæ in place of the fresh cow's milk.

DIET FROM THE FIRST TO THE SIXTH YEARS

After the first year, whole milk may usually be given, and a more extended and varied diet is desirable, and, indeed, necessary for proper growth and development. The following diet schedules will be found appropriate for the needs of the growing child.

FIRST YEAR TO THE EIGHTEENTH MONTH

First Meal, 7 to 7.30 A.M.—One or two tablespoonfuls of barley, wheat, or oatmeal gruel in half a pint of milk. (The gruels are made by cooking the cereal for three hours and then straining.) Gruel may be alternated with zwieback or stale toasted bread.

9 A.M.—The juice of an orange or the pulp of three

to six stewed prunes may be given or half of a scraped, ripe apple.

Second Meal, 11 A.M.—One or two teaspoonfuls, or a tablespoonful, of scraped rare beef, or two or three ounces of beef juice, or a soft-boiled egg mixed with dry bread crumbs, a half-pint of milk, a bran biscuit, a crust of bread or slice of toasted bread.

Third Meal, 2 to 3 P.M.—Mutton, chicken, or beef broth, with dry bread crumbs mixed with it, and a large glass of milk. After the fifteenth month plain desserts may be given at this meal, such as custard, corn-starch, rice-pudding (without raisins), baked apples, or apple sauce, or the pulp of stewed prunes. A flour made from peas, beans, and lentils by the Cereo Company, and called "Légume Flour" makes a most excellent and nourishing soup, and may be used alternately or in place of broths.

Fourth Meal, 5.30 to 6.30 P.M.—After the fifteenth month this meal should be made up of from one to three tablespoonfuls of cereal gruel, as farina, oatmeal, or barley, in eight ounces of milk, and a tablespoonful of apple sauce. Before the fifteenth month the child will probably require a milk feeding at 10 P.M.

DIET FROM THE EIGHTEENTH MONTH TO THE SECOND YEAR

Breakfast, 7 to 7.30 A.M.—One of the cereals, such as oatmeal, hominy, farina, or cream of wheat, given with milk and cream, a soft-boiled egg, or a lamb chop

finely cut, a glass of milk, dry toast, or stale bread and butter.

9 A.M.—A small amount of scraped raw apple or the juice of an orange, and one graham cracker, or some zwieback.

11 A.M.—The lean from rare beefsteak or roast-beef either scraped or finely cut, or beef juice with stale bread crumbs, spinach, asparagus tips, baked apple, or apple-sauce, a piece of bread and butter, and a glass of milk.

After the nineteenth or twentieth month, baked potatoes, with salt and butter, or cream, mashed string-beans, or new peas, carefully mashed, may be given in small quantities.

2.30 to 3 P.M.—A cupful of beef, chicken, or mutton broth with dry bread crumbs broken into it or thickened with peas, farina, or rice, or four to six ounces of Légume soup, a piece of brown or white bread and butter, a glass of milk, stewed prunes, apple-sauce, or plain rice-pudding.

6 P.M.—Bread and milk, rice and milk, hominy and milk, farina and milk, or cream of wheat and milk.

THE DIET FOR A CHILD OF FROM TWO TO SIX YEARS OF AGE

After the second year the diet may be considerably expanded, and the mother will be able to choose a more varied bill of fare.

BREAKFAST, 7 to 7.30 A.M.—The juice of an orange, or a baked apple, oatmeal gruel, farina, hominy, cream

of wheat, rolled wheat porridge with cream, and a small amount of sugar (if desired), a soft-boiled egg, poached, or coddled egg, bread and butter, a lamb chop, or a small piece of finely cut rare beefsteak, a glass of milk, a small piece of toast, some tapioca, or stewed rhubarb.

10 A.M.—A graham cracker and a glass of milk, or the pulp of six stewed prunes.

DINNER, 12 to 1 P.M.—Chicken, beef, or mutton broth, a small piece of rare roast beef or steak, broiled or stewed chicken (white meat), baked, broiled, or boiled fish, new string beans or peas, spinach, asparagus tips, boiled creamed white onions, and boiled new carrots, macaroni boiled in salt water, or spaghetti (these two articles are especially good in summer to take the place of meat), creamed celery, purée of stewed corn, or corn that has been boiled on the cob scored and pressed out with the knife, and bread and butter, and a glass of milk.

For desserts the following may be given: Orange, lemon, or calf's foot jelly (made with gelatine), baked apple, apple-sauce, cornstarch, custard, bread-pudding or rice-pudding without raisins, crabapple, quince, or raspberry jelly spread on bread, tapioca pudding, blanc-mange.

3 P.M.—A glass of milk and a graham cracker, if the child feels hungry and seems to require it.

SUPPER, 5 to 6 P.M.—Bread and milk, graham crackers and milk, farina and milk, cream of wheat and milk, hominy and milk, rice and milk, thick pea soup or cream of celery, or Légume soup, bread and

butter, plain or spread with a little currant, raspberry, crabapple, or quince jelly; a little plain ice-cream or custard may be given once or twice each week.

RECIPES

Beef, Mutton, and Chicken Broth.—To a pound of meat free from fat add a quart of water and cook for three hours, gradually adding water so that when done there will be a pint of broth. When this is cool, all fat should be skimmed off, and, after straining, the broth should be seasoned with salt.

Beef Juice.—This is prepared by broiling a round steak very rare, cutting it into pieces an inch square, squeezing out the blood with a lemon-squeezer, and adding a little salt.

Scraped Beef.—After a round steak has been broiled rare over a quick fire, it is cut through edgeways and the pulp scraped from the inside with a dull knife.

Barley Gruel and Barley-Water.—These may be made either from the grains or from the barley flour. If the grains are used, two tablespoonfuls should be cooked in a quart of water for at least three hours, adding water so that when done there shall be a quart of the barley-water. This is strained through coarse muslin or cheesecloth, and seasoned with salt; when cool it makes a thin jelly. This has an approximate equivalent of protein .24 per cent, carbohydrates 1.20 per cent.

An easier and more satisfactory way to make barley jelly is to use the barley flour, either Robinson's or that made by the Health Food Company of New York, or the Cereo Company's barley gruel flour. Two tablespoonfuls of this flour is cooked in a quart of water for twenty minutes. If a stronger gruel for older children is required, three or four level tablespoonfuls to the quart of water may be used.

Rice-Water and Oatmeal-Water are made in the same way as barley-water, using two level tablespoonfuls, or more, of either the flour or grains to a quart of water, according to the strength desired.

Barley, Rice, Oatmeal, and Wheat Jelly are made by using four tablespoonfuls of the cracked grains to the quart of water, and cooking for three hours, then straining through a colander, and seasoning with salt.

Rice-water and barley-water are of value in diarrhœa, while oatmeal-water is given for its laxative effect in constipation.

Egg or Albumen Water is made by adding the white of one egg that has been thoroughly beaten to a pint of cold boiled water, with a pinch of salt and a teaspoonful of brandy added. It is useful in cases of vomiting and very irritable stomachs.

Dextrinized Barley-Water is made by adding three tablespoonfuls of Robinson's barley flour to a pint of water, and cooking for twenty minutes, enough water being added during the cooking to make a pint of barley-water when it is done. When cooled to a

temperature of 100° F. a pinch of salt and a teaspoonfull of cereo are added.

Whey.—Heat a pint of milk until it is lukewarm (100° F.), add two teaspoonfuls of Fairchild's essence of pepsin, stir a little, and allow it to stand until jellied, then beat with a fork, and strain through cheesecloth. The indigestible curd remains in the cloth.

Arrowroot Gruel is made by boiling two teaspoonfuls of arrowroot in a pint of water for twenty minutes and then straining. It is of service in diarrhœa.

Lime-Water.—Add a heaping teaspoonful of slaked lime to a quart of boiled or distilled water, keep in a corked bottle, and shake several times; then allow the lime to settle, and after twenty-four hours the upper clear fluid may be removed for use.

RULES FOR FEEDING CHILDREN

A very important part of a child's early education is learning to eat proper foods, and also learning the way in which they should be eaten, for, almost in babyhood, it is very easy for children to acquire habits which, after they are formed, may be exceedingly hard to break.

Meals should be given at regular intervals, and no food should be allowed between meals, even if the child has refused food at the regular time.

A child should never be given indigestible food in

order to stimulate the appetite, in the hope that this may induce it to take simple food, and it should never be allowed to play with its food.

It is never necessary to amuse a child while it is taking a meal, so that it will eat more. A child should never be urged or forced to eat, but the food should be removed, and when the next meal-time comes the child will probably be ravenously hungry.

Children should not be allowed to eat only one food at a meal, and should they refuse to eat an important article of their diet—such as cereal, vegetables, milk, or meat—that particular article should be given them first before the appetite is satisfied, and all other food kept back until the cereal, vegetables, milk, or meat is eaten.

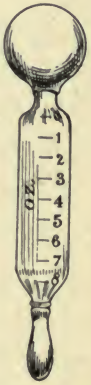
All food should be given in a very digestible form: meats should be cut up fine, vegetables thoroughly cooked, so that they can be mashed fine with a fork, and cereals cooked until they are very soft.

In very hot weather and in acute illness the food should always be reduced both in strength and in amount.

An infant may refuse its food altogether, in which case a careful examination should be made of the mouth to see if it is sore. If satisfied that this is not the cause, a careful examination of the food may show it to be sour, or, for some other reason, at fault.

PREMATURE AND WEAK INFANTS

In the care of premature babies three things are of vast importance and should be constantly kept in mind: proper nourishment, proper heat in the body, and abundance of fresh air.



Breck Feeder.

The digestive organs are in a premature state in these infants, and on that account the most digestible food must be given. Mother's milk fulfils this requirement, and upon this these infants thrive best. As mother's milk is rarely to be had at first, a wet-nurse who has a child from one to two months of age should be obtained. The wet-nurse while nursing the foster-child should nurse her own as well, for the premature infant will be unable to take all her milk, and its weak efforts at nursing will soon dry up the breasts, whereas the vigorous nursing of the strong child will stimulate the flow of milk.

When the premature child is too weak to nurse, the milk should be pumped from the breasts and administered by means of the Breck feeder, giving at first one-half ounce at a feeding, ten or twelve feedings being given in the twenty-four hours. If it is impossible to obtain a wet-nurse, whey, a diluted cream mixture, or condensed milk, one teaspoonful to three ounces of water, may be given.

In order to keep up the body heat the child should be wrapped in cotton, put in a padded crib, and hot

water-bottles placed about it. A thermometer should always be kept between the cotton surrounding the child and the bedclothes in order to regulate the temperature of the hot water-bottles. The temperature registered by the thermometer should be from 85° F. to 95° F., the degree depending on the temperature of the child; the lower the temperature of the child the greater should be the artificial heat.

The trouble with most incubators is that they do not supply the infant with a sufficient amount of pure air, which is of such vital importance.

Most physicians have had little success in raising premature babies in incubators, and are agreed that similar methods to those above described are the best.

For these delicate infants it is vital to avoid any chilling of the body. For the first few weeks, it is better to omit the daily bath and anoint the skin with warm oil instead.

MALNUTRITION AND MARASMUS

If a child fails for a considerable time to gain, or even loses, weight, this denotes a state of malnutrition. There are all grades of severity in under-nourished cases, from children who gain very little, or none at all, in weight, to those who lose rapidly. A few of these children have been born weak and delicate, but most are in this condition through improper feeding. The food has been given too strong, too weak, too much at a time, too often, or with too high or too low a

percentage of fat, protein, or sugar. In other words, it has not been properly adapted to the child. The usual story is that after a few trials it was thought the mother could not nurse her baby because her milk did not agree with the child, or later because it was thought she had not sufficient milk, or because the child suffered from colic; then artificial food, such as modified milk, or some patent meal food, is substituted. One after another these are tried with equally sad results; the child's weight remains stationary, or steadily decreases until it becomes a living skeleton.

This advanced or aggravated form of malnutrition is called marasmus, and is a heavy tax upon the physician's skill and the mother's patience. These emaciated little sufferers, with their whining, restless cry, dry, wrinkled skin, hollowed temples, anxious, old expression, and protruding abdomen, form, indeed, one of the most pathetic pictures the physician is called to look upon. Frequently their digestion has been so upset and weakened that it takes a long time before they can assimilate food of such strength as a healthy child of the same age should take. In many cases, barley or rice gruel should be given until the digestion has improved; then, very gradually, a little cream or cow's milk may be added; and later, after perhaps some weeks, the child may be gradually brought back to a regular milk diet.

Malnourished children should be given a salt-water bath every day at a temperature of 105° F. This bath should not last longer than ten minutes, and the child should be thoroughly rubbed all over with the

hand while in the water, then quickly dried with a bath towel, and rubbed well from head to foot with cocoa butter or goose oil. Warm clothing, except during the hottest months of summer, should be worn, and flannel next the skin, with warm stockings. Frequently it will be found necessary to place a hot water-bottle in the bed at the feet of the baby to keep them warm. Fresh air is also most important, and when the weather is warm enough they should be kept out-of-doors all day.

During the winter they should have an outdoor airing of an hour or two, except when the weather is inclement; then all the windows in one room should be opened, and so an indoor airing be provided, the child being dressed as for outdoors and placed in a carriage or in a crib with hot water-bottles at its feet. During the night the windows in the bedroom should always be opened for ventilation. Fresh air stimulates and invigorates the baby, gives it a better appetite, and increases its power to take stronger food.

The management of hundreds of malnourished babies during the past twelve years has taught me that the greatest care and patience is required by the mother or nurse, and by the physician in charge, if the child is to be restored. It is only by adhering most scrupulously to details that our efforts have been rewarded and most of such little sufferers saved.

"COLD SORE" OR "FEVER SORE"

This is of very common occurrence in young children. There may be one, or a number of small water-blisters on the lips; these rupture, and crusts are formed. On account of the great tendency of children to pick the lips "cold sores" may be long in getting well, so that some mechanical means, such as the "Hand-I-Hold" babe mits to restrain the child, should be used. Spirits of camphor applied several times a day is healing and drying. The sore should be kept clean by frequently bathing it with a saturated solution of boracic acid, and then drying it with a dusting powder of equal parts of boracic acid and zinc oxide powder. Internally a brisk cathartic of a glass of citrate of magnesia water should be given, and a teaspoonful of rhubarb and soda mixture three times a day.

This affection is usually due to a feverish condition of the blood and to hyperacidity and indigestion.

STOMATITIS, SORE MOUTH

Stomatitis may be catarrhal in its mildest form, characterized by redness and swelling of the mouth and gums, with salivation. Or it may be of the aphthous variety, which is canker sore mouth; this appears as little yellowish areas upon the mucous membrane of the mouth and tongue from the size of a pinhead to that of a pea. There will be fever,

the tongue will usually be coated, and the child will refuse to eat.

Stomatitis may also be of the ulcerative type. This is the most severe and serious of all the varieties. It is characterized by deep ulcerations of the gums at their junction with the teeth; the gums are very red and swollen and bleed easily; the teeth may become loosened, or even fall out; there may be profuse salivation; and in some cases quite high fever, coated tongue, loss of appetite, and severe pain on chewing.

This disease is due to uncleanliness of the mouth, together with a disordered stomach. Children with stomatitis should be given a saline cathartic and their mouths rinsed frequently with a saturated solution of boracic acid, or some other mild antiseptic solution, such as borolyptol, one part to four parts of water.

These cases all need to be seen by a physician, as they require internal medication to effect a cure.

COLIC

Colic always means indigestion. It may be present in the breast-fed or in the bottle-fed baby, but in every case it indicates that the food does not assimilate, in other words, is not properly adapted to the child. The most frequent cause of colic in this connection is too high a percentage of protein, which is the curd-forming element of the milk. Another common cause is too frequent feeding. Therefore the first thing to be done is to correct the feeding, which

often is the only thing necessary to relieve the condition. If the child is breast-fed treatment must be given the mother. It will usually be found that she, as well as the child, is habitually constipated. The mother is, perhaps, a hearty eater and of sedentary habits. She should be put upon a simple, easily digested, substantial diet, with tea and coffee in moderation only, together with fresh meat, poultry, cereals, soups, green vegetables, fruit, milk, cocoa, chocolate, and a generous amount of water. Her bowels should move freely every day. She should spend three hours in the open air each day, taking gentle exercise, with care not to become over-fatigued.

Fright, anger, worry, or menstruation of the mother will often cause serious indigestion, or colic, in the child.

In an attack of colic the child cries vigorously and almost incessantly until relieved, the face becomes red, the legs are drawn up, the fists are clenched, the abdomen is distended and hard. These attacks may come on at any hour in the day after feeding, but are most common in the afternoon. This is on account of frequent feeding during the day, which results in an overworked stomach towards evening, while at night the stomach gets more rest. Children may have only mild attacks of colic and be fairly well otherwise, but frequent and severe attacks usually denote malnourished children. A baby rarely cries except when it is in pain, cold, or hungry; its tendency is always to smile, play, and be happy. Thus, if one baby cries more than another, it is not because it is

bad-tempered, but because the crying baby suffers more than the other.

Colic is most commonly seen in babies under six months of age.

In the treatment of habitual colic the first requirements are to adapt properly the food to the child's digestion, to relieve the attack by an injection or enema of eight ounces of warm salt-water, a hot water-bottle placed at the feet, and hot applications placed over the abdomen (these may be flannels wrung out in hot water). Hot water should also be given by mouth with a medicine dropper and a few drops of well-diluted brandy, or peppermint water should be added. Soothing syrups should never be given.

VOMITING

Many causes may produce vomiting. While it usually attends an acute attack of indigestion, as the result of improper food or feeding, it may be a symptom attending the onset of any of the acute diseases, such as scarlet fever, pneumonia, or meningitis. Immediately upon the occurrence of vomiting, all milk feeding should be discontinued and only boiled water or barley-water given, and that in small quantities every three hours; but where the boiled water or barley-water causes vomiting nothing whatever should be given until it ceases. In severe cases it will be found necessary to continue to give only water or barley-water for from twenty-four to forty-eight hours before

a more substantial diet will be retained, and then the milk must be given diluted four to eight times with water, and gradually strengthened as it is found that the child can retain and digest it.

In many cases the quickest means of relieving the little patient is by washing out the stomach, using a small stomache-tube for the purpose. This will usually bring about a very speedy cure.

HABITUAL VOMITING

It is not uncommon for babies to regurgitate, or vomit, a part of each feeding, especially when they are very young.

This invariably means that the food is too strong, or that too much is taken at a time. Often it will be found that the feedings are given at too frequent intervals.

The treatment consists in suitably adapting the milk and regulating the intervals of feeding in the artificially-fed, and, for breast-fed children, making an examination of the breast milk, and if that is found at fault, correcting it, if possible, by suitable regulation of the mother's diet, exercise, habits, etc. If too frequent nursings have been given they should be decreased in number. Although habitual vomiting may not cause serious trouble or loss of weight, yet it is always an indication that the stomach is overtaxed, and in case of serious illness, or during very hot weather, the child with whom vomiting has been habitual will not have the same resistance as will the child which has properly assimilated its food.

DIARRHŒA

More deaths in infancy are due to diarrhœa than to any other cause; about fifty thousand children under two years of age died from this cause alone in the United States during the year 1908. About three-quarters of the fatal cases of diarrhœa are artificially-fed babies.

Errors in diet are accountable for the vast majority of cases of diarrhœa, but occasionally other causes, such as extreme heat, fright, sudden changes in the weather, etc., may be the causative factor.

Diarrhœa is an effort on the part of nature to eliminate poison, or whatever the irritation may be, from the system.

During the hot weather a child cannot digest as strong food as it is in the habit of taking when the weather is cool. Consequently, if the same diet is given, indigestion is very likely to occur, with fermentation, and the formation of gases and poisons; or if undigested food remains in the intestines it will cause irritation to the bowel, and diarrhœa will be the result.

Mild diarrhœa may develop into a serious or even dangerous condition in a few hours.

Cholera infantum is the worst and most dangerous type of the disease. Its onset is usually sudden and severe, but, on the other hand, it may be gradual, with all gradations of severity, from slight fever, vomiting, and four or five greenish stools each day, and little or no prostration, to high fever (104° F. to 106° F.),

with frequent vomiting, first of food, then of mucus and bile. This condition may be accompanied with constipation, or foul-smelling green or brown stools, in number from five to thirty in the twenty-four hours, and containing large amounts of mucus.

When very frequent the stools may consist almost entirely of mucus and water. They are also sometimes tinged with blood. In the severe type of the disease the condition is one of great prostration, with rapid, thready pulse, cold extremities, sunken eyes, leaden hue, open mouth, shallow and irregular breathing. The child has apparently succumbed to the poison, and it seems as though each breath might be the last.

Of the many hundred cases of gastro-enteric disease that come each year under my care, only a few are of this last, and most severe, type.

In all cases, the first duty is to stop at once all milk, either breast or bottle, and all other food. The child should be put to bed, where it can be absolutely quiet, and given an initial dose of castor-oil. Children under three months of age should have nothing but plain boiled water or sugar-water in place of milk; children over that age, barley jelly or barley-water. After twenty-four to forty-eight hours of this diet, if there are only two or three stools a day and the vomiting has ceased, the child may be allowed to take the breast for every other feeding. After a day or two, if all goes well, the breast may be given at every feeding. For bottle-fed babies the milk will have to be resumed very cautiously, and it may be

that whey, or condensed milk, or some malt preparation, should be given. In many cases it will not be possible to give fresh cow's milk during the heated term, making it necessary to select some other food until cool weather. Even then the cow's milk should be added very gradually, a little at a time, until the child is brought back to a proper nutritious diet.

CONSTIPATION

Constipation frequently occurs in infants and young children, and in many cases is most obstinate and annoying. It is seen both in bottle-fed and breast-fed babies, and also in older children.

In cases of the breast-fed baby the fault usually lies with the mother. Almost without exception it will be found that she is habitually constipated, is of sedentary habits and a hearty eater, and not infrequently drinks a considerable amount of tea.

Usually babies can be relieved by regulating the habits and diet of the mother, who should take at least three hours exercise each day out-of-doors, and should see that she has a free evacuation of the bowels every day. Her diet should be simple but substantial, with fruit, cereals, red meat, vegetables, milk, and cocoa. Very often an examination of the mother's milk will show a deficiency of fat.

If the constipation in the child persists after the above measures have been taken it should be given one-half to a teaspoonful of gravity cream in a small

amount of hot water three times a day. If this does not accomplish the desired result it may be necessary to repeat the dose before every second feeding, or even every feeding for a while.

A moderate amount of malt liquors, such as beer or ale, taken by the mother with meals will increase the amount of fat in the milk.

Constipation in bottle-fed babies is usually due either to excess of protein, or insufficient fat, in the milk. Children should never be given a milk containing more than four per cent of fat, nor should the protein be reduced to below one per cent in a child under six months of age, and for proper nutrition 1.5 per cent is desirable, so that in adapting the milk to the child these limits should be our guide.

Constipated infants should always be given raw milk, as cooking has a constipating effect upon milk.

The food given to constipated infants can be made more laxative and at the same time more nourishing by diluting the milk with oatmeal water instead of plain water.

Malted milk has usually a laxative effect and may be substituted for cow's milk at one of the feedings each day, suiting its strength to the age of the child. A teaspoonful of orange juice three times a day is of value as a laxative, and I advise it in all my feeding cases, irrespective of constipation, as it prevents any tendency toward scurvy. Sweet-oil or pure cod-liver oil are recommended also, especially in malnourished or rickety babies. The oil should be given

in doses of ten to thirty drops three times a day after feeding.

If after the above measures the stools are still constipated, I advise an injection composed of two ounces of warm sweet-oil. This should be given just before the child is put to bed for the night, and should be retained in the bowels over night.

Water enemata or suppositories should not be given habitually, as they will cause irritation of the bowels and the child will get to depend upon them for a movement. Drugs are rarely necessary and should never be given except under the guidance of a physician. If the suggested measures are faithfully employed they will probably be quite sufficient to bring about regularity of movement.

Constipation in older children may be due to too concentrated a diet, fissure in ano, or piles. Perhaps the commonest cause is the use of large quantities of whole milk, especially if it has been cooked. Children who take a good deal of milk want little else, and consequently do not get enough of the coarser foods which act upon the bowels. Many children have not been taught regularity in their habits.

Constipation in older children is treated by adopting a diet of cereals, fresh vegetables, meat, fresh fruits, eggs, whole-wheat biscuits, graham crackers, and other coarse breads. If milk is given at all it should be raw, and in the shape of diluted cream, which is made by taking the upper half of a quart of milk on which the cream has risen and diluting it with water. In very bad cases of constipation,

white bread should not be given; milk also had better be omitted entirely from the diet, and cocoa, chocolate, and water given instead.

Every morning at a certain hour the child should be placed on the chamber and kept there for fifteen minutes; establishing this habit will help to overcome

Syringe for Oil Enema.

constipation. If, after all these changes in the diet have been followed out faithfully, constipation still persists, it will be necessary to employ drugs and make use of the oil enema in order to effect a cure.

HICCOUGH

This is quite a common affection among babies and is usually due to indigestion, or overloading the stomach. It is caused by a sudden spasmodic contraction of the diaphragm, and at the same time a closure of the glottis. This condition results from irritability of the stomach, which affects the nerves of the diaphragm.

In older children, hiccough, like spasmodic crying, coughing, and laughing, often accompanies, or results from, hysteria.

For an immediate attack, babies should be given hot water, a few drops of brandy in water, or a few drops of Hoffmann's Anodyne in water, and the feeding should be regulated. It may be necessary to lengthen the intervals of feeding or shorten the time at the breast.

In the case of older children, holding the breath, blows on the back, or swallowing water may be tried. In the more severe cases, a cold shower-bath should be given. If this treatment does not afford relief a physician should be called, ether sprayed on the abdomen, and other remedies administered—such as chloroform, musk, Hoffmann's Anodyne, or sulphonal, in order to overcome the spasm.

FISSURE OF THE ANUS

These are slight tears in the mucous membranes at the anal opening. They may occur as a result of constipation followed by hard lumpy movements. Such movements cause a good deal of stretching as they pass through the anus.

Rupture of the mucous membrane or fissure may also occur, as a result of the straining, and excoriating discharges of diarrhœa.

A fissure of the anus will cause great pain at each movement of the bowels; so acute is the pain that a child will often shriek at each paroxysm, and older children will delay having a movement as long as possible because they dread the pain.

The patient when constipated will be relieved by suitable diet and laxatives which keep the movements soft.

Appropriate diet and medication will overcome the diarrhœa if present. Besides this, the fissure will need to be treated locally by a physician to bring about a cure.

WORMS

There are three varieties of intestinal worms which may occur in children—threadworms, roundworms, and tapeworms.

Threadworms look like little pieces of white thread from a quarter to half an inch in length. They cause great itching or irritation about the anus and are especially annoying after the child gets warm in bed. They may cause such burning sensations about the anus as to keep the child awake and produce nervous symptoms. They are sometimes evacuated in large numbers with the stools, and several hundred may infect the bowels at a time.

Roundworms, although not so frequently seen as pinworms, are of fairly common occurrence from the second to the tenth year. The symptoms are not characteristic and may be very indefinite. In fact, not infrequently the diagnosis is first made by the passage of one or more worms which resemble somewhat the common earthworm, except that they taper to a point at each end. They are white and vary in length from four to seven or eight inches.

Children suffering from roundworms may have poor appetites, sleep badly, or grind their teeth at night, and pick their noses, but the more reliable symptoms are diarrhœa and constipation, colic and indigestion. The eggs may be seen in the stools. In rare instances roundworms have been known to cause convulsions.

Tapeworms seldom occur in children of this country and give no characteristic symptoms. In cases which I have seen, the children have been thin and pale, with abnormally large appetites, and have had more or less indigestion, with constipation or diarrhœa. Usually the first symptom noticed is a discharge from the bowels of part of the worm, which may be a number of feet in length and looks like small pieces of white tape linked together. As long as the head remains the worm continues to grow and feed upon its host, and at intervals segments may come away in the stools.

Worms may cause serious troubles if not eradicated by proper medication and treatment. For this reason no mother should rely altogether upon home remedies in her efforts to get rid of these troublesome guests.

INFANTILE SCURVY

This is a disease of infancy characterized by its gradual and, sometimes, almost insidious onset. There is anæmia, the child gradually changing from a healthy color to waxy-white. There is pain at first

on handling, and the child cries out lustily when touched; finally, it does not move the affected limb, and acts as if paralyzed, while the other is moved freely. Swellings may appear upon one or more bones, most frequently upon the lower extremities. The ribs may be separated from the cartilages, causing the front of the chest to sink in. The gums are red, swollen, and soft, and bleed at the slightest touch, but with children without teeth the gums may appear normal.

There may be small hemorrhages under the skin, mucous membranes, or conjunctiva, and there may be bloody urine or blood in the stools; these latter symptoms, however, are rare. There is usually no fever, and, though in a small percentage of cases it may be present, it is rarely as high as 102° F., is variable, and is usually caused by complications.

Scurvy is most common in infants under one year of age, and is rare after the second year. Scurvy results from feeding babies proprietary foods, condensed milk, sterilized, or boiled milk, as a steady diet.

Of forty-two of my own cases all could be traced to these causes. It never occurs in breast-fed children and is purely a food or nutritional disease.

The treatment is fresh raw cow's milk, raw beef juice, and orange juice. With older children scraped apples, lemon juice, oatmeal gruel, and chicken broth may also be given. The raw milk is given as a food, and the orange juice and beef juice given from one to two teaspoonfuls three or four times a day.

It may take weeks or months for this disease to develop, but, if properly treated, it can be cured in from three days to two weeks, according to its severity. There are different grades of severity and only two or three of the symptoms may be present.

Those symptoms most frequently seen, according to my observations, are pain on handling, more or less prostration, swelling of one of the lower extremities, sponginess of the gums—which bleed easily—fretfulness, disinclination to take food, and stationary weight, or loss of weight.

RICKETS

Rickets is a nutritional disease affecting the bones, muscles, nervous system, and other organs of the body. It comes as a result of improper nourishment or ill-adapted food.

Children with rickets are pale, have flabby muscles, and dentition is delayed, and, not infrequently, difficult. The fontanelles are very slow about closing; there is often curvature of the spine; the head is large and cubical in shape; the ends of the long bones may be enlarged, and the child's ribs become beaded; there is sinking in of the chest-wall, and the legs may be bowed on account of the softness of the bones. The abdomen is large, and the child often sweats about the head and neck. Children so affected are frequently small for their age and under weight; they are poor sleepers, restless, irritable, subject to convulsions, and very slow about learning to creep,

sit, stand, and walk. Their mentality is also below that of healthy children.

The treatment of this disease is proper food, fresh air, salt-baths, oil rubs, maltine and cod-liver oil, iron tonics, etc., but most important of all is a proper diet suitable for the age, as indicated elsewhere under the heading of diet.

TAKING COLD

Taking cold is the result of a sudden chilling of the surface of the body, which produces, usually, a congestion of the mucous membranes of the respiratory tract. Taking cold comes from undue exposure, especially when the skin is moist and perspiration abundant, as is often the case when the child is dressed for an outdoor airing and left bundled up in a warm room until the nurse is ready. Then, when it is taken out into the cold air, the sudden change is so great that the child takes cold. Children that live in very warm houses, that are burdened with too much clothing, or become overheated with active play are very apt to take cold. Wet feet, exposure to raw winds and melting snow are all causes that induce colds.

An infant or young child should always have its own handkerchief, and never under any circumstances should a handkerchief be used for more than one person.

There is no doubt that bacteria play an important rôle in the ordinary cold, and after congestion of the

mucous membrane has once occurred it makes a good field for the bacteria to work upon.

A mother or nurse should never hold a child in a draft, as before an open window, or take it into a cold room or drafty hall in cold weather, when it is insufficiently or improperly clothed, as this is a common way to induce a cold. To allow rooms to become overheated during the day and too cold at night is also a fruitful source of colds. A child will perhaps be put to bed in a warm room and will kick the bedclothes off; later in the night the room grows cool, the child becomes chilled, and most likely a cold will be the result.

If mothers would guard against these causes they could do much to prevent the all too frequent colds.

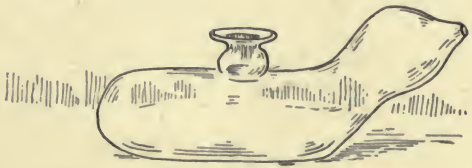
COLD IN THE HEAD

This is a very common condition in babies and young children, and, although usually not serious when it affects only the mucous membranes of the nose, there is danger that in infants the inflammation may spread, causing bronchitis or broncho-pneumonia.

The first symptom to be noticed is that the child breathes with difficulty, and when nursing often has to stop, drop the nipple, and gasp for breath. This is caused by the congestion of the mucous membrane of the nose, which, by its swelling and the watery secretion always present, almost entirely stops up the

baby's small nostrils. There is usually only a degree or two of fever. In very young infants this stoppage of the nasal passages has been known to cause severe asphyxia, as they do not know how to breathe through the mouth.

Children with colds in the head should be kept in a room where the air is moist, at a temperature of 70° F. The eyes should be washed with a saturated solution of boracic acid, and every hour or so a little liquid albolene, alone, or to which a small amount of



The Birmingham Douche.

menthol and camphor may be added—camphor, one grain; menthol, two grains; albolene, one ounce—should be put in each nostril by means of a little absorbent cotton twisted on the end of a wooden toothpick; or a little camphorated cold-cream or vaseline, or sweet-oil may be used. An initial dose of castor-oil before the physician arrives, is of advantage. Watery douches should never be used in the nose of an infant, as they may spread the infection to the middle ear, which is one of the commonest complications.

In older children, where the discharge from the nose is thick and tenacious and the condition has reached a subacute stage, a cleansing nasal douche of warm salt-water, or some mild healing antiseptic solution, such as borolyptol, one part to ten of water, should be given several times a day. The Birmingham Douche can be used for this purpose. After

Oil Nebulizer.

the cleansing douche a small amount of liquid albolene, alone, or with menthol and camphor—menthol, four grains; camphor, two grains; albolene, one ounce —can be sprayed with an oil atomizer into each

nostril. This soothes, stimulates, and protects the mucous membrane, and hastens a cure.

If the cold in the head is the result of measles, nasal diphtheria, or adenoids it should receive the proper treatment, which is described elsewhere.

It should be remembered that colds are more or less contagious, so that adults suffering with colds should not be allowed near babies or young children. We must bear in mind also that a cold in the head may be the first symptom of measles, nasal diphtheria, or influenza.

PROPER WAY TO EXAMINE THE THROAT

It is important that a mother should know how to examine a child's throat. The illustration shows the method of holding the child securely while making this examination. The nurse, either standing or sitting facing a window, her right hand and arm placed under its buttocks, holds the child from slipping down, while her left hand and arm, passed across the front of its body, holds the hands securely pinioned to its sides. The one who is making the examination, now with the left hand over the child's forehead, presses its head back firmly against the nurse's chest or shoulder, then, using the handle end of a teaspoon as a tongue depressor, presses down the tongue, and thus has full view of the back of the throat. This method gives the examiner perfect

control over the child and insures a thorough examination.

THE NORMAL APPEARANCE OF THE THROAT

Every mother should be taught to know the appearance of a normal throat, so that she may distinguish

Proper Way to Examine the Throat.

an abnormal condition when it presents itself and be able to take immediate measures for its relief. She should know at a glance if the throat is inflamed, or if there are whitish or yellowish dots upon it, or

gray-looking patches in the throat or on the tonsils. She should be able to tell if the throat looks redder than normal, since redness, inflammation, or the appearance of spots or patches demands the presence of a physician, as this condition may be the beginning of serious illness, such as scarlet fever, measles, tonsilitis, or diphtheria.

TONSILITIS

Tonsilitis is a very common affection among infants and young children during the winter and spring months. Usually the attack is sudden, with temperature of 103° or 104° F. The symptoms are restlessness and peevishness, and refusal to take food on account of pain in the throat.

The tonsils are swollen and of a deep red color, with frequently small whitish or yellowish specks on them. These latter may later coalesce and form white or yellow patches which resemble very closely the membrane of diphtheria, and can, in some instances, be distinguished only by a bacteriological examination.

Much can be done in tonsilitis to relieve the pain in the throat and hasten a cure by local applications and internal remedies. Before the physician arrives, cold compresses may be applied to the throat, the patient given a bath and a dose of castor-oil, and, if old enough, a gargle of hydrogen peroxide.

ADENOIDS

These tumor-like growths develop as a result of hypertrophy, or chronic enlargement, of the mucous

Way to Apply a Compress to the Throat.

glands of the nasopharynx. They may be as small as a kernel of rice, or as large as a walnut and completely obstruct the opening which leads from the nose to the throat.

The necessity for prompt treatment of this condition in infancy and early childhood seems not to

be fully appreciated by parents and the general practitioner. Too much emphasis, however, cannot be placed on the fact that adenoid growths of the nasopharynx are probably responsible for more minor ailments in infants and young children than any other pathological condition found, and if appropriate measures are not taken for their relief they may be the source of grave after-troubles.

According to G. L. Richards, seventy per cent of all cases of adenoid vegetations occur between the ages of one and fifteen years, and Bosworth's Statistics make it appear that in ninety per cent of his cases the adenoids developed in infancy or early childhood.

My own records show from thousands of cases treated that adenoids are most frequent in children over six months of age and up to the sixth or eighth year. The youngest patient I have operated on was six weeks old. There are many predisposing factors which may favor the generation and growth of adenoids, but among the commonest are repeated colds in the head, the use of the "pacifier," living in small and poorly ventilated rooms, and dust-laden city air. Heredity also plays a part in the propagation of adenoids; they are more frequent in some families than in others, and several children in the same family may be affected.

One of the commonest symptoms of adenoids is chronic cold in the head, and children so affected are said to catch cold easily and have snuffles all

winter. A hacking cough which is worse at night is also very suggestive of adenoids.

Adenoids may indirectly be the cause of headache, earache, and abscess of the ear. Dr. Dench tells us "Adenoids are responsible for more than half of the pathological conditions met with in the middle ear."

At birth the postnasal space is very small, being only one-quarter of an inch high and one-third of an inch wide, so that a very slight adenoid hypertrophy at this time, and during the first year, will cause obstruction. This space in a year-old child will have doubled in size. If the adenoid growth is large enough to cause obstruction there will be mouth-breathing, which causes snoring at night. Most children that breathe through the mouth or snore will be found to have adenoids or enlarged tonsils. In cases of long standing the facial appearance is unmistakable. It is characterized by the open mouth, drawn expression, small thin nose, and vacant eye, which give the child a stupid look. The hearing is frequently impaired. Kyle says ninety per cent of all adenoid cases are accompanied by some degree of deafness. There is difficulty in blowing the nose, and occasionally severe nosebleed.

It is said adenoids may be the cause of bed-wetting, and in fact cases of bed-wetting have been cured by the removal of the adenoids.

Another symptom may be the nasal twang to the voice, and speech is sometimes impaired. Children

with adenoids are particularly susceptible to diphtheria, scarlet fever, influenza, and other contagious diseases, and when they are attacked the case is apt to be more severe than with children free from these obstructions. Any, or all, of the symptoms enumerated may be present in cases of adenoids.

The treatment is complete removal of the adenoids; this is a slight operation and is without danger. Local applications, gargles, and sprays are of no use in the treatment of this condition.

ENLARGED TONSILS

Chronically enlarged tonsils are quite frequent among children, although not nearly so common as adenoids. They are usually associated with adenoids, and adenoids may be caused by enlarged tonsils. The symptoms we get in cases of adenoids alone are aggravated by the presence of enlarged tonsils. Children with enlarged tonsils are subject to frequent attacks of sore throat and tonsilitis, and are more apt to contract the contagious diseases, such as pneumonia, diphtheria, scarlet fever, etc.

Medical treatment is of no avail in these cases. The tonsils should be removed. The operation is practically without danger when performed by a skilful operator, and the relief it affords is most striking.

Parents feel well repaid for the anxiety caused by

the thought of an operation, as after it is over they realize that the health of the child depended upon it.

OTITIS MEDIA OR EARACHE

This is a very common affection during infancy and childhood. It usually follows some inflammatory condition of the throat, such as appears with infectious diseases like measles, scarlet fever, diphtheria, tonsilitis, influenza, or even a common cold in the head. This inflammation may sometimes occur in apparently healthy children.

The two most common symptoms are fever and pain, which make an infant restless and peevish during the day and wakeful at night, causing it to nurse poorly and to show tenderness about the ear on the affected side. In very severe cases the child may scream with pain if the ear is touched. The temperature varies from 100° F. to 102° F.

In the majority of cases during infancy pain is only evidenced by crying, but older children will put the hand to the painful ear.

Inflammation of the internal ear may be catarrhal or suppurative. Catarrhal inflammation usually subsides in a day or two, under proper treatment. Where the fever or pain continues for more than twenty-four hours suppuration has probably occurred, and the condition is best relieved by a slight operation to remove the pressure on the drum membrane.

Not infrequently the drum membrane will rupture of itself, and this will be followed by a discharge into the canal of the ear.

When otitis, or earache, occurs put the child to bed, wrap it up tightly in a sheet or blanket, place a basin, protected by a towel, under its head, and irrigate the affected ear with a douche—given from an ordinary fountain syringe—of water heated to a temperature of 110° F. One or two pints of water should be used, the douche bag should not be held more than two feet above the child's head, and the tip of the syringe should be placed about a quarter of an inch from the opening to the ear. This douche may be given every hour until the pain subsides or the physician arrives.

Soft Rubber Ear-Syringe.

Dry heat is also an excellent means of relieving the pain of earache. This may be applied by means of a hot salt bag, which is made by sewing together two pieces of muslin five inches by three inches long, filling half full with salt, heating in the oven, and binding over the ear; or by filling the finger of an old glove with hot salt and placing the tip in the ear. The salt retains the heat for a long time. Older children can rest the head on a hot water-bag. Never put laudanum or oil in the ear for earache.

In giving the douche an assistant will be necessary

to steady the child's head, as it is sure to struggle and resist the treatment.

HEADACHES

In babies and little children headaches rarely occur except when there is disease of the brain; but in older children they are not infrequent and may be due to a variety of causes, the most frequent of which is the absorption of toxins from the intestines as a result of putrefactive changes, chronic indigestion, and constipation. They are not infrequent from breathing impure air in poorly ventilated rooms. Other common causes, especially in children from nine to fifteen, are malnutrition and anæmia, and headaches are also often seen in children who have been advanced too rapidly in their studies.

Many children at the school age suffer from headaches due to eye strain, from errors of refraction, strabismus, or other abnormality of the eyes. (These cases will need to be fitted for glasses.) Again, there may be growths in the throat, such as adenoids, or growths in the nose which require removal, or a chronic catarrhal condition in the nose, causing stoppage. Otitis media or foreign bodies in the ear may be the cause of headache.

Headaches may be of nervous origin, such as are seen in epilepsy, hysteria, or tumor of the brain.

In girls, when menstruation is difficult or delayed, headaches sometimes occur.

The treatment for headaches consists in finding out the causative factor producing them and treating this, as has elsewhere been described. For the immediate relief of the pain, cloths dampened with cold water may be bound about the head, or an ice-bag applied, a hot foot-bath or mustard foot-bath given, and a glass of citrate of magnesia water or a dose of castor-oil and two grains of phenacetin.

COUGH

A cough in an infant or young child, when not due to whooping-cough, is invariably the result of some abnormal condition connected with the respiratory tract; either disease of the inner surface of the nose, throat, or bronchial tubes, or some disease affecting the lungs or pleura. One of the commonest causes of cough at night is the presence of enlarged tonsils or adenoids, relief from which may be quickly obtained by means of a slight operation.

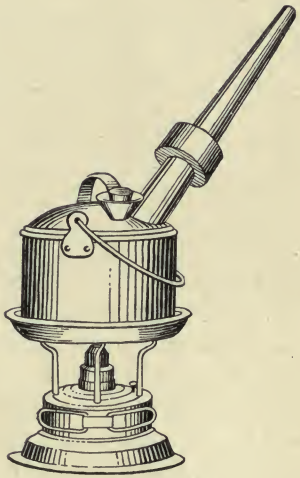
We not infrequently hear of the "nervous cough," the "stomach cough," the "liver cough," but these exist only in the minds of the inexperienced.

In older children who have heart disease there may be a dry hard cough due to pulmonary congestion, and cough may be one of the manifestations of hysteria in children in the teens, but this, too, is

usually due to an abnormal condition of the respiratory tract.

CROUP

This may be either a catarrhal or membranous variety. Catarrhal croup is induced by catarrhal in-



Holt Croup Kettle.

flammation of the larynx, while membranous or diphtheritic croup is due to membranous inflammation of the larynx.

Catarrhal croup may come on gradually, following a cold in the head or tonsilitis after a period of two or three days, with a slight fever or indisposition; the voice becomes more and more husky until it may

be difficult for the child to speak much above a whisper. The cough is very hoarse, hollow, and barking, and the breathing, in croup, is so loud that it can frequently be heard for some distance.

A child may be put to bed with only a slight cold or cough, or be apparently well, when suddenly, after sleeping quietly for a time, it will sit up in bed, gasp for breath, and, after an attack of loud, hollow coughing, will break out into perspiration.

At the onset of croup the child should be given a teaspoonful of syrup of ipecac, and at the end of a quarter of an hour, if vomiting has not occurred, another teaspoonful can be given. The patient should of course be isolated until a definite diagnosis has been made. A dose of castor-oil, a cold compress applied to the neck, and steam inhalations by means of a croup kettle under a tent made from a sheet spread over the crib, are all valuable treatments. The fumes from menthol crystals heated in a metal pan over a flame are also of service.

Membranous or diphtheritic croup is one of the most serious affections with which we have to deal. Its onset is very much like that of catarrhal croup, except that it is more gradual and that the breathing becomes more and more difficult. A mother cannot tell whether the child has catarrhal or diphtheritic croup, unless diphtheria is known to be present, so she should take no chances, but send for a doctor at once, as, if the case is diphtheritic, skilled treatment obtained in time will probably be the means of saving the patient's life.

BRONCHITIS

Bronchitis is usually due to cold or exposure and should be looked upon as a serious affection when it occurs in young or delicate infants, as it is an easy matter for the inflammation of the large bronchial tubes to extend to the smaller ones, and so to the lungs, causing broncho-pneumonia.

Bronchitis may come on, suddenly or gradually, from the extension of inflammation to the bronchial tubes, from a cold in the head, or from laryngitis. Its presence is evidenced by a cough, increased, and, in some cases, slightly labored breathing, a " rattling " in the chest, and fever. Some bronchitis is almost always present with measles, and it may be a complication of some other diseases.

If seen early, an attack can usually be cured in a short time by counter irritation upon the chest wall in the shape of a mustard paste,—one part mustard to four parts of flour,—applied to the chest for twenty minutes every four hours; or, in mild cases, three times a day. This, with proper internal medication, and warm moist air produced by steam from a croup kettle, will generally be found effectual.

Children with bronchitis should never be loaded with heavy clothing or pads. The underclothing should be of wool, loose and comfortable. Poultices and patent cough syrups must never be used.

In mild attacks the chest should be thoroughly rubbed with camphorated oil twice a day in place of the mustard paste.

PNEUMONIA

The lungs are more frequently the seat of organic disease in infancy and early childhood than any other organs of the body. Pneumonia, an inflammation of the lungs, is common as a primary disease and as a complication of the acute infectious diseases comes first on the list.

There are two common varieties of pneumonia in infancy and childhood, lobar and broncho-pneumonia.

Lobar pneumonia is usually a primary disease. The onset is sudden, not infrequently with a chill or chilly sensations, vomiting, or, in some cases, a convulsion. The temperature is high, from 103° F. to 105° F., the respirations are labored and from forty to sixty to the minute, the face is flushed, and there is prostration. Lobar pneumonia when uncomplicated may last from three to eleven days. Ordinarily, however, the crisis comes on the fifth or seventh day, when the temperature drops to normal, all symptoms subside, and convalescence takes place.

The onset of broncho-pneumonia is usually gradual. It is frequently engrafted upon, or is a complication of, another disease, such as a cold in the head, bronchitis, measles, diphtheria, whooping-cough, or diarrhœa.

Broncho-pneumonia attacks principally young and delicate infants; it may continue for weeks or months, but ordinarily lasts from two to four weeks. It is a much more serious disease than lobar pneumonia. While the fever is lower in broncho-pneumonia than

in lobar pneumonia, being from 101° to 102° or 103° F., there are, with the bronchial form of the disease, steady wasting of the body, poor appetite, and lack of vitality.

In pneumonia careful nursing is as important as drugs. The patient should be placed in a large, well-ventilated, sunny room kept at a temperature of from 65° to 70° F.; the diet should consist of milk and broth, and for young infants the milk must be well diluted.

The child should be kept quiet, and undisturbed by visitors; only the nurse and mother should be allowed in the sick room, and, preferably, only the nurse for most of the time. There should be no gas burning in the room, and the windows should be opened night and night. Every half-hour or so the child should be turned from side to side, but otherwise disturbed as little as possible. All underclothing should be light, loose, and of woolen material.

The endeavor should be made to make the child as comfortable as possible, in order that it may conserve its every ounce of strength to overcome the disease.

LYMPHATIC GLANDS. ACUTE ENLARGEMENT OF THE GLANDS OF THE NECK

Swelling of the glands of the neck is quite a common occurrence in infancy and early childhood, about three-quarters of the cases occurring in those

under two years of age. The glands back of the jaw and below the ear and jaw become suddenly swollen from the size of a hickory nut to that of a hen's egg. There is fever, and the glands are tender and painful. This is due usually to an infection from a sore mouth, decayed tooth, abrasion in the mouth, tonsilitis, or any other diseased or inflammatory condition of the mouth or throat. It may also be due to a neighboring lesion of the skin. These glands sometimes enlarge very rapidly and cause considerable alarm, but the condition is not dangerous. Either the swelling and enlargement subsides completely under treatment, or goes on to abscess formation, when incision and drainage will bring about a cure. At the first appearance of swelling of the glands the child's mouth should be thoroughly cleansed with an antiseptic mouth-wash, such as borolyptol, and if there is a sore throat or a decayed tooth it should receive immediate attention. Over the swelling, cold treatment should be applied in the shape of a small ice-bag or cold compress, and then the child should be seen by a physician.

GLANDS—CHRONIC ENLARGEMENT

Chronic enlargement of the glands of the neck is a condition not infrequently found in children. It may be due to one of several causes, tuberculous infection, syphilis, infection from the mouth—as from adenoids or enlarged tonsils—or from skin diseases.

The glands at the angle of, and underneath, the jaw, or down the side of the neck, may be enlarged from the size of a pea to that of a walnut, feel hard like a marble, and be slightly tender.

Chronically enlarged glands are most frequently seen in delicate, malnourished children. Such children require careful supervision and should be seen frequently by a physician, who may direct their feeding, outdoor life, and medication.

HAIR

The hair of young children should not be allowed to grow too long, but should be cut at regular intervals. Long hair in the summer makes the child unnecessarily hot about the neck, and on that account may cause fretfulness. When the hair is short it is easier to care for and the head is more easily kept clean.

Cutting the hair makes it grow in stronger and thicker, and results in a more luxuriant growth later in life, which, in the case of a woman, adds greatly to her beauty. Even older children, when attacked with a prolonged and wasting fever, such as typhoid, should have their hair cut to prevent its falling out.

The head should be kept clean and free from crusts in order to promote a proper growth of hair.

HEAD-LICE

Children may become infected with head-lice from other school children, from servants, or from public conveyances.

The treatment is to cut the hair short, wash the head thoroughly with soap and warm water, and, after it has dried, a solution of one part of diluted acetic acid or vinegar to six parts of tincture of larkspur and six parts of alcohol, should be thoroughly rubbed into the scalp, and a cloth dampened with this solution tied about the head for two or three hours. This should be repeated for several days, or until the lice are all killed.

Where the hair is long it need not necessarily be cut, but may be parted in different places and the remedy thoroughly rubbed in. To remove the nits a fine tooth-comb will be required, and it will take longer to get rid of them than when the hair is cut. Ordinary kerosene oil may be used when the acetic acid and larkspur are not at hand.

MILK-CRUST OR SEBORRHŒIC ECZEMA OF THE SCALP

This is a form of eczema due to the inflammation and excessive secretion of the sebaceous glands of the scalp-skin, and is characterized by the formation of crusts or thick layers of a yellowish or discolored material. This condition causes itching of the scalp,

and gives the appearance of uncleanliness, which, however, is not the case, as washing with soap and water has little effect upon it.

Milk-crust can quickly be cured by the use of a five per cent salicylic acid ointment, applied morning and night on soft linen, under a close-fitting muslin cap, to be worn constantly.

Before the treatment is begun the hair should be cut short. After several days of treatment the scalp material will have softened and can be easily washed off.

CARE OF THE SKIN

An infant's skin is very delicate, and to insure a healthy condition great care is required. It should be kept clean and dry, and this can be accomplished by a daily bath of plain boiled water, using only Castile soap. Then it should be thoroughly dried and all the folds of the skin, the axilla, groin, and genitals, well-powdered with equal parts of starch and zinc oxide powder.

During hot weather, sponging with tepid water will cleanse, cool, and quiet the child and often prevent prickly heat, scalding, intertrigo, or eczema.

PRICKLY HEAT

Prickly heat is a very frequent affection in infants and young children during hot weather. It is due to the heat and excessive sweating.

An eruption consisting of very small light red or pink papules appears. They may be located principally on the neck, chest, back, or abdomen, but they also frequently cover the whole body, even the face. This eruption itches and causes considerable discomfort.

Prickly heat, in most cases, is the result of wearing too much and too heavy clothing. Children during the warm weather should be dressed in thin, loose, cotton underwear.

The itching of prickly heat may be relieved by frequent bathing, and, after the bath, sponging off with a solution of bicarbonate of soda—a tablespoonful of soda to a quart of water—drying without friction, and dusting the skin thoroughly with equal parts of starch and borated talcum powder.

INTERTRIGO

This is an eczematous inflammation of the surface of the skin about the buttocks, anus, groins, and inner surfaces of the thighs. The skin becomes very red, angry, and extremely sore. Intertrigo occurs as the result of allowing soiled diapers to remain on the child.

The skin is very delicate, and frequently the urine is very acid and causes irritation and excoriation.

The care in these cases consists of changing the diapers as soon as they are soiled, and washing the parts gently with Castile soap and warm water, and,

after careful drying, applying with old linen cloths either Lassar's paste or zinc oxide ointment to the excoriated surface. This should be done as often as the parts become wet or soiled.

HIVES

This is quite a common affection in children. It is characterized by the sudden appearance of an eruption resembling large wheals from one-half to an inch, or larger, in diameter. These are red, smooth, flat, and firm.

There may be only one or two on any portion of the body, but sometimes the mucous membrane of the mouth, or tongue, or nearly the whole body, may be covered. Intense itching always accompanies this affection. The rash may disappear in a few hours or it may last several days.

Hives are almost invariably caused by indigestion, due to indiscretion in diet. Strawberries, cheese, fish, rich cakes or pastries—and occasionally diphtheria antitoxin—may bring about an attack of hives. To relieve the itching frequent bathing, and sponging with a strong solution of bicarbonate of soda, or a soda bath, will be found excellent. A dose of castor-oil. or citrate of magnesia water, and a salt-water enema to clear the bowels, together with internal medicine and a restricted diet, will speedily effect a cure.

ECZEMA

Eczema is an inflammation of the skin very commonly met with in infants and young children. It may appear on any part of the body, but is most frequently seen on the face, forehead, scalp, buttocks, folds of the skin, or where two surfaces come in contact, such as flexor surfaces of the joints.

The skin of an infant is very delicate, and any local irritation is a fruitful source of eczema. Strong soaps, excessive perspiration, liniments, exposure to cold winds, lack of cleanliness, discharges from the nose or ear are productive of eczema. Soiled diapers left too long without changing are sure to produce eczema of the buttocks.

Eczema is very frequently caused by indigestion, especially in well-nourished babies, both breast and bottle fed. The face and cheeks become bright red and scaly, and the eczema may be moist and angry looking.

In treating a case of eczema the cause of the trouble must first be removed, whether it be external or internal. If the disease comes from indigestion in breast-fed babies the mother's diet, bowels, and exercise should be regulated so that her milk will be suitably adapted to the child. In bottle-fed babies a study should be made of the food in order to adapt it to their digestive capacity.

In treating a case of eczema measures should be taken to prevent the child from scratching. For this purpose a splint may be bandaged over the elbow

joints, so that the arms cannot be flexed, or gloves may be worn; but what is best of all is the " Hand-I-Hold " * babe mits, worn as shown in the illustration.

Hand-I-Hold Babe Mits and Method of Bandaging in Eczema of Head and Face.

These consist of celluloid balls perforated with holes, which are tied on the hands. They come in different sizes, according to the age of the child, and will be found an excellent protection.

*"Hand-I-Hold" babe mits are made by R. M. Clark and Company of 246 Summer St., Boston, Mass.

The local areas of eczema should be kept dry, a suitable ointment applied, and the part bandaged.

It must be remembered, however, that ointments, lotions, or powders are of little value in the treatment of this condition unless they are used in connection with dietetic and hygienic measures, and internal medication when required.

WARTS

Warts are small hard or horny elevations due to a hypertrophy of the two layers of the skin. They may be few or numerous, and are from the size of a pin-head to half an inch in diameter. They may appear on any portion of the body, but are commonly seen on the hands of children.

Warts may suddenly appear, attain their full size rapidly, and as quickly disappear; or they may remain indefinitely.

Painting the growths with the juice of the milkweed or tincture of iodine will often make them disappear. They may also be burned out with strong acids. The quickest way to remove these troublesome growths is by excision with the knife, by snipping them off with curved scissors, or curetting them out by the roots. Cocaine or freezing may be employed to avoid all pain, but operations of this sort are not always desirable, and should not be employed except in extreme cases.

STIES

Sties are localized inflammation of one of the glands at the margin, or surrounding tissue, of the eyelid.

They may indicate general ill health, and are frequently seen associated with refractive error of the eyes, or are the result of eye strain. Bacteria gain entrance at the root of the eyelash and set up inflammation. Before suppuration develops abortive treatment may be tried, using frequent applications of a saturated solution of boracic acid and applying compresses wet with the same solution to the lids. Another method is the application of yellow oxide of mercury ointment to the lids. Pain and swelling may be relieved by the use of frequent hot-water compresses. When suppuration appears a slight incision will be necessary to effect a rapid cure. Children that are run down in health or have errors of refraction should receive appropriate tonics or be fitted for glasses, as the case may require.

BOILS

These are local infections underneath the skin. The germs gain entrance through a minute abrasion, hair follicle, or sebaceous sweat gland. They vary in size from a pea to that of an almond. They occur most frequently upon the head, face, and shoulders of children under two years of age. Very often children with boils are suffering also from digestive dis-

turbances, but not necessarily. After one boil others usually soon appear. This is because the pus is carried by the lymphatics, or escapes on the surface and is spread to other portions of the skin, causing further infection which may result in a great many boils.

Boils are best treated by opening them with a slight incision, squeezing out and removing the pus with absorbent cotton, thoroughly washing the whole surrounding skin with soap and warm water, then with alcohol, painting each boil with tincture of iodine, and applying an antiseptic dressing of saturated solution of boracic acid. Gauze or clean linen should be soaked in the solution and applied to the affected surface, then bandaged to keep it in place.

This dressing should be kept moist with the boracic acid solution. Later on, when scabs have formed, a suitable ointment may be applied.

IVY-POISONING

Children who go to the country sometimes become poisoned with the poison-ivy. This may affect the hands, face, arms, legs, or any exposed part of the body, and cause intense itching and burning, with considerable swelling, redness, and pain. The parts affected should be bathed in a strong solution of common salt, or bicarbonate of soda. Compresses moistened with one of these solutions should be applied at frequent intervals. Dampened clay laid on the sur-

face is also of value and affords great relief. The fluid extract of Grindelia (one part to ten parts of water) is highly recommended as a local application.

NETTLE-RASH

This is another troublesome condition that is brought about by contact of the skin with the nettle-weed. It produces swelling and redness of the skin, with intense burning and itching. It is best relieved by frequent bathing and applications of a strong solution of bicarbonate of soda.

BURNS

Burns are of various degrees of severity and require treatment accordingly. Thus we have severe sunburns, burns from hot metal and fire, also scalds from steam, hot water, etc.

The first thing to do for every burn is to keep the air from the injured part and thus relieve the pain. For this purpose, where the burn is of the first degree, a thick paste made from bicarbonate of soda can be used. It should be spread over the burnt skin; this will cool the burnt surface and relieve the pain and stinging.

Where the burn is more severe or extensive equal parts of linseed oil and lime-water (carron oil) should be liberally applied, and the part covered with pieces

of soft old linen; but if these are not at hand sweet-oil or vaseline may be used instead until medical aid arrives. The shock from severe or extensive burns is often of a serious nature and the patient requires internal stimulation, such as brandy, whisky, and aromatic spirits of ammonia.

FROST-BITE

Frost-bite, although rather rarely seen, does occur sometimes in children, and mothers should know what to do in such cases.

The thing to be dreaded is the partial or total death of the tissues whose vitality has been so lowered by the cold. Cases of frost-bite should be handled with the utmost care if gangrene of the frozen part is to be avoided. The circulation should be brought back very gradually by gently rubbing the parts affected with snow, or immersing them in ice-cold water and applying friction. This treatment should be applied in a cold room, and the patient under no circumstances allowed near a fire or where there is heat of any kind. After the general temperature of the body and of the frozen part has become about normal, alcohol and water, spirits of camphor, or camphorated oil, should be applied with friction, and the affected parts elevated and covered with cotton. Stimulating drinks may now be given cautiously and the air of the room gradually warmed.

CHAPPED HANDS OR LIPS

Chapped hands are the result of prolonged and continuous exposure of the parts to wet and cold. To relieve this condition keep the hands warmly covered with gloves or woolen mittens in the winter, and never use cold water, strong antiseptics, strong soaps, or washing-powders.

Ointment consisting of one part of Balsam of Peru to seven parts of lard should be applied to the lips and hands several times a day, alternating with glycerine, and where the cracks in the skin or mucous membrane are deep they may be painted with collodion.

CHILBLAINS

Chilblains may result after a moderate exposure to dry cold or cold damp air, followed by a sudden warming at the fire. This is especially the case in children and those with feeble circulation. A chilblain may appear on the nose, ears, or lips, but the commonest seat of chilblains is the fingers or toes.

The symptoms are swelling, redness, heat, and itching of the part. These symptoms may become very annoying, and in some cases serious if neglected. Children who have been once attacked are liable to recurrences, so that they should always during cold weather wear warm woolen gloves and socks, and warm mufflers for the ears and face. Measures should

be taken to improve the circulation by means of massage and tonics After exposure to cold any sudden approach to the fire should be avoided. Mild, acute chilblains may be rubbed gently with snow, and then ice-cold water may be applied. This treatment, with rest and a soothing lotion, such as lead and opium wash, will usually effect a cure, but in the more chronic or severe cases stimulating liniments and other measures will be necessary.

Recently the following treatment has been recommended by a French physician: the affected parts are bathed morning and evening in a decoction of walnut leaves, followed by friction with spirits of camphor, and after this the parts are dusted with a powder consisting of one part of bismuth salicylate to six parts of pulverized starch. The following prescription, to be applied at night, is also advocated: Glycerine and rose water, an ounce and a half of each, to which is added fifteen grains of tannin.

STINGS AND BITES

The stings of nearly all small insects are acid, depending for their acidity upon formic acid. Remedies used for the relief of bee stings, mosquito, fly, spider, bug, or other insect bites may be mud or damp clay, also applications of a thick solution of bicarbonate of soda, or ammonia water upon the affected part. Sometimes the extreme itching of mosquito

bites can be relieved by sponging the part with a 1 to 100 solution of carbolic acid, and this treatment has the advantage of quieting the itching and keeping the mosquitoes away. Stings may also be cooled and relieved by the use of vinegar, pure or diluted. Pure hydrogen peroxide applied immediately upon a sting or bite is a valuable remedy. Extract of ipecac powder made into a paste and applied to bee stings is also of service.

In case of snake bites a tight bandage or ligature should be placed at once just above the bite, between it and the heart, to prevent the spread of the poison, and spirits of ammonia, aromatic spirits of ammonia, brandy or whisky should be given internally as stimulants. The drug of greatest value is permanganate of potash, applied externally and also injected into the area of the wound. For this last treatment a physician will be required. An antitoxin is also used in snake bite. It has been shown experimentally that the bile taken from a poisonous snake is a powerful antidote for the snake bite, so that after a snake bite, if it is possible to kill the snake, all its bile should be injected near the wound.

Bites from animals, such as dogs or cats, are rarely of a serious nature. In the many persons who are bitten by dogs and cats each year it is, fortunately, rare for hydrophobia to develop, since it can only develop from the bite of a mad dog, and happily dogs rarely go mad. But, though the ordinary bite is usually a trifling matter, every precaution should

be taken to guard against the possibility of hydrophobia in the child.

A bite should be immediately cleansed with hydrogen peroxide and cauterized with a small pointed red-hot iron; or with caustic potash, applied to the wound after the surrounding tissue has been protected by adhesive plaster with a hole cut in it the size of the wound. After it is believed that the caustic potash has burned deep enough, it should be washed off with diluted vinegar. Then a solution of carbolic acid (one teaspoonful to a pint of water) should be applied to the wound in the shape of a wet dressing, using gauze or clean linen.

The early destruction of the wounded tissue before symptoms of the disease appear will usually prevent its occurrence. Further treatment, if necessary, will be prescribed by the physician.

In every case of bite, if the animal is suspected of rabies it should be kept alive and under observation, as by killing the animal doubt as to whether it was mad or not will be left in the mind and cause anxiety for months, or even years, on the part of the person bitten. If the animal is really mad it will only live a short time.

Licking may be a serious menace and make necessary the same treatment used for a bite. A dog or cat should never be allowed to lick an open wound, abrasion of the skin, or a sore on a child. I have known grave anxiety to result from licking by a dog. I have now in mind a child who was sent for treatment to the Pasteur Institute because a thoughtless

maid allowed a pet dog to lick a sore on the child's leg. The dog was attacked with rabies and bit a cat, which went mad.

SPRAINS

Sprains commonly occur upon the ankle, wrist, knee, and finger joints. They are due to a fall, or wrenching of the part, causing severe stretching, tearing, or complete rupture of the ligaments. This is accompanied by great pain and followed by swelling. Sprains are often of a serious nature, and to effect a cure requires careful treatment and prolonged rest, with immobilization.

The first thing to do in case of a sprain of the lower extremity is to put the patient to bed, where the affected part can be kept at rest, and hot compresses applied. These consist of cloths wrung out of water heated to a temperature of 110° F. When the upper extremity is involved hot compresses should be applied and the arm kept in a sling. When hot water is not immediately obtainable a cold compress may be used. Further treatment should be prescribed by the physician in charge; but when in the country or far from a physician, witch-hazel or tincture of arnica should be thoroughly applied, with gentle friction to the part. Another remedy, which is very serviceable and much used in the country, is clay moistened with warm vinegar and applied as a poultice over the sprain.

TOOTHACHE

If, as has been elsewhere indicated, the teeth receive proper care and attention toothache should rarely occur.

By the habitual use of a soft tooth-brush and tooth-powder, combined with regular visits to the dentist twice a year, and restriction in the matter of sweets, this terror of childhood may be practically done away with. When these precautions have been neglected and a cavity has formed with resulting toothache a small amount of absorbent cotton may be soaked in oil of cloves and placed in the decayed tooth. If oil of cloves is not at hand the cotton may be soaked in chloroform, or equal parts of tincture of iodine and tincture of aconite. Toothache may result from soreness of the gums when there is no cavity, in which case the gums about the tooth should be painted with equal parts of tincture of iodine and tincture of aconite.

When cavities exist an early visit to the dentist is in order, so that the trouble can be permanently arrested.

BRUISES

Bruises are of frequent occurrence in childhood and should receive prompt attention. The affected part should be placed in water at a temperature of 110° F., or as hot as can be borne with comfort by the hand.

After the pain has subsided a wet dressing of boracic acid solution or witch-hazel should be applied. Severe bruises require the attention of a physician.

CUTS

Cuts should be washed and cleansed with hydrogen peroxide, a wet dressing of gauze dipped in boracic acid solution applied, and the part snugly bandaged. When the cut is deep or extensive and there is much bleeding the bleeding can be stopped by applying a pad made up of many thicknesses of gauze, and bandaging tightly. Large cuts, or cuts on the face or head, require stitches, which demands the services of a physician at once.

NOSEBLEED

Nosebleed in infants is of rare occurrence except in connection with a systemic disease, but in children over three years, and especially at the school age, it is not so infrequent.

Nosebleed may be due to traumatism, or occur in children that are confined in close, warm rooms; it is sometimes a result of catarrh of the nose, with ulcers or erosions on the septum. Sometimes it comes from adenoid vegetations. Foreign bodies causing erosions will sometimes produce nosebleed. It may also occur in infectious diseases, such as pneumonia

and typhoid fever, in certain blood diseases, in scurvy and in heart disease, and with girls at the time of puberty. The commonest cause of nosebleed is the formation of little ulcers or erosions of the mucous membranes of the septum, produced by picking the nose. These are especially apt to occur in delicate children.

Bleeding from one nostril is due either to the presence of a foreign body or to nasal diphtheria. No matter what the cause, the treatment for immediate relief is to place the patient in an upright position, grasp the nose tightly with the thumb and forefinger just in front of the nasal bones, and hold it for from fifteen minutes to half an hour; then apply ice cloths, and prevent picking or blowing of the nose.

Vinegar or lemon juice may be sprayed into the nose, or a piece of bacon fat, cut to fit and placed in the nose, may stop the bleeding when other remedies have failed. If the bleeding is severe or repeated a physician should be consulted at once.

The prophylactic treatment is to eliminate the above mentioned causes by appropriate measures and so insure a permanent cure.

FOREIGN BODIES IN THE EAR OR NOSE

Children at the runabout age frequently put all sorts of small things into their nose or ears; indeed, some seem to have a positive mania for it. I have taken beans, peas, small buttons, shoe-buttons, small

bells, pieces of coal, small stones, and a variety of other little objects from the ears and noses of children.

As soon as it is discovered that the child has put something into its ear or nose it should be taken at once to the doctor. No attempt should be made by the mother or nurse to remove the foreign body, as usually the effort only succeeds in pushing the object in farther, and the nose or ear may be seriously injured by an attempt to relieve the situation with a button-hook or a hairpin—the instruments generally brought into use for this purpose.

Children who repeat this offense should be thoroughly punished each time it occurs.

FOREIGN BODIES SWALLOWED

As soon as children begin to creep about the floor, and also at the runabout age, the mouth becomes the receptacle for all manner of small bodies, such as coins, rings, marbles, pins, safety-pins, and other small objects. These are afterward swallowed, and later passed through the bowels without harm to the child in the majority of cases.

When a foreign body has been swallowed the child should be fed upon bread and milk and mashed potatoes, as this diet will form an incrustation around the foreign substance, and it will become buried in a mass of food and so pass more easily and with less danger through the stomach and bowels. No cathartic should ever be given to hasten the passage, as such measures

will increase the peristaltic action of the bowels and so increase the danger of impaction of the foreign body.

CARE OF THE GENITAL ORGANS

Cleanliness of the genitals and proper attention to their care is often neglected in infants and young children until harm results from reflex irritation. It is most important that the genitals, both of boys and girls, be thoroughly cleansed every day with Castile soap and warm water when the bath is given. This is especially necessary in the case of boys. If the foreskin is long and the opening small and constricted circumcision should always be performed. If it is not long but only adherent, the adhesions should be broken up and the foreskin retracted and the organ washed with soap and water and thoroughly smeared with vaseline every day until healed. A very large percentage of male children are better off for circumcision. With a long foreskin it is impossible to keep the organ clean. Smegma collects back of the glands, adhesions form, with resulting irritation, which frequently causes bed-wetting and masturbation, nervousness, poor sleep, and general ill health.

TRAINING TO A PROPER CONTROL OF BOWELS AND BLADDER

A great deal can be done in the matter of teaching a child while young a proper control over the bowels

and bladder. It is often possible to train an infant by the third or fourth month to have its movements from the bowels when placed on a small chamber. This should be done soon after nursing. If a child can be taught this control it not only saves much work in the washing of diapers but also insures a movement at a regular time.

By the end of the first year, and in some cases earlier, almost all children can be taught to control the bladder and make known when they wish to empty it. By the time a child is two, or two and a half, years of age it should be able to hold its water all night if taken up and placed on the chamber at ten or eleven (P.M.) o'clock. Giving children liquids at night should be avoided, as this is responsible for much bed-wetting.

The importance of creating these habits while the child is young is very great, as it is essential to health later in life and lessens to a marked degree the care and trouble attendant upon infancy.

RETENTION OF URINE

Several causes may prevent a child from passing its urine. In girls it may be from vaginitis or that highly acid urine irritates the parts, while in boys there may be highly acid urine, or a long foreskin which has become swollen, so that the small opening is almost or entirely closed. High fever is sometimes accompanied by retention of urine, and in some cases

a cold, or sudden chilling of the surface of the body produces this result. If, after twelve hours, no urine is passed the child should be placed in a hot bath of 110° F., when the urine will usually be passed. Another method of inducing the flow of urine is to apply cloths, wrung out in hot water, to the abdomen and to the genital organs. An enema made up of a pint of salt-water at a temperature of 110° F. will probably be effective if the other measures fail. As a last resort a catheter should be passed by a physician to relieve the bladder distension, and internal medication given.

BED-WETTING. INCONTINENCE OF URINE

The involuntary passage of urine up to the third year of age should not be considered an abnormality, though many children, if properly trained, can be taught to make their wants known and voluntarily void their urine when two years, or even one year and a half, old.

If a child continues to wet the bed after the third year medical advice should be sought.

Incontinence of urine may be due to any one of a variety of causes, such as adenoids, constipation, worms, tight or adherent foreskin, highly acid urine. With girls, inflammation of the vulva, or vagina, may be responsible for this condition. Occasionally an abnormally small bladder or stone in the bladder brings about this difficulty. In the majority of cases,

however, it is of nervous origin, the proper nerve control of the bladder not being sufficiently developed. Bed-wetting may sometimes be due to the fact that the child drinks a large quantity of liquids at night. Where this is the case the mother may do much to control the difficulty by giving a simple, dry supper consisting of a cereal, with butter and sugar, bread and butter, and stewed prunes. Nothing should be given to drink after 4 P.M., and at 10 or 11 P.M. the child should be taken up and placed upon the chamber and made to pass its urine.

If adenoids, worms, or other abnormal conditions are present, appropriate treatment should be employed as indicated elsewhere. If this does not alleviate the trouble, proper medication, together with the faithful co-operation of the mother, will usually bring relief, although some little time will probably be required to establish a permanent cure.

CHILDREN'S PARTIES

It is a common custom to give birthday and other parties to young children of the runabout age, or even younger. Six or eight little ones of the same age are invited, and animal crackers, cakes, colored ice-cream, and pink lemonade are served.

The little host and little guests have their stomachs filled with nicknacks to which they are not accustomed, and there results, very probably, an acute

attack of indigestion, accompanied by vomiting and diarrhœa, and, frequently, convulsions.

Such a party, bringing together a number of little children, has very often been the means of spreading contagious diseases, which are always more serious at this tender age than a few years later.

EXCITEMENT

Excitement, in the shape of too much play or fondling, or that brought about by being with noisy children or adults, is an extremely bad thing for infants and young children.

The nervous system of an infant or young child is in a very undeveloped and unstable condition, and it only takes a little to overtax it. Many parents do not know or realize this fact, and the baby is allowed to be present at afternoon tea-parties, birthday parties, and holiday festivities, where it is seen, handled, kissed, and talked to by many strangers; all of which is extremely injurious to the nervous system, although it may make the child scream with apparent pleasure. I have many times been a witness of the resulting exhaustion to the baby after some such function. Indeed, hardly a day passes that I do not see this over-fondling and over-indulging going on, and caution mothers against it.

DISORDERS OF SLEEP

Restless sleep in babies is usually due to indigestion resulting from improper or over-feeding; but it may be caused by hunger, or, in some cases, by pain or itching; occasionally it comes from teething, pain in the ear, or colic. Not infrequently feeding at night is a cause.

In older children the commonest cause is indigestion. Adenoids or enlarged tonsils, poor ventilation in the sleeping-rooms, cold feet, constipation, too much or too little bedclothing, anæmia, whooping-cough, malnutrition, St. Vitus' dance, exciting stories at night, exciting scenes, or violent play, may all be causes of restlessness or wakefulness at night, and careful investigations should be made to find out which of these is responsible for the difficulty.

NIGHT TERRORS

These attacks are not infrequent with children, and are due usually to the same causes as those mentioned under "Disorders of Sleep." They are like a nightmare. The child awakens suddenly with a start, very much terrified, and sometimes in a state of cold perspiration. It says it had a bad dream, it sees animals or men, and is too frightened to stay alone. Sometimes the child will wake up in a dazed condition and will not recognize the mother or nurse.

Night terrors are very apt to follow a Thanksgiving

dinner or children's party, where all sorts of unaccustomed things have been eaten.

Often a child can be quieted by having a light in the room or being taken into the mother's or nurse's bed. No soothing syrups of any kind should ever be given. If mothers could only realize the danger from these nostrums, which contain opium, they would never allow them in the house. All disorders of sleep are best treated by removing the cause, and when this has been done there will be no difficulty in sleeping. If the diet is at fault, then it should be made very simple. There may have to be made changes in the modification of the milk. All bad habits, such as giving food at night, hearing exciting stories, or joining in exciting play, should be stopped. The child should have a light and simple supper, such as a cereal and milk, and should be put to bed early in a well-ventilated room. Often a warm bath just before going to bed will insure sleep. Other conditions, such as adenoids, anæmia, malnutrition, etc., will require appropriate treatment.

CONVULSIONS

A convulsion is a brief nervous disturbance characterized by an involuntary rhythmical spasm of any or all the muscles, and usually by loss of consciousness. Young babies are particularly susceptible to convulsions during the first year. At that time the nervous system is in an extremely unstable condition because

of the brain's rapid growth, which is greater during the first year than in all the years that follow.

My experience has taught me, after treating very many cases of convulsions arising from various causes, that the vast number of cases (over ninety per cent) result from some disturbance of the digestive organs. All these cases have occurred in bottle babies badly fed, or in older children who have been given all sorts of food unsuited to their years.

Convulsions very frequently usher in the acute contagious diseases—influenza, scarlet fever, measles, and also pneumonia. Convulsions are seen in epilepsy. Severe attacks of convulsions may cause hemorrhage into the brain with resulting paralysis.

FINGER AND THUMB SUCKING

Infants, especially during the early months, very often form the habit of sucking the hand, thumb, fingers, toes, arm, or, perhaps, some foreign object, such as a "sugar teat" or rubber nipple. This habit may be accompanied by the rubbing of some part, such as the head or the genital organs, by pulling the hair or ear, or scratching the head or body. Habits of this kind may continue through infancy and childhood if stringent measures are not taken to break them in very early infancy. The longer the habit persists the harder will it be to overcome, and serious deformity to the lips, teeth, and even the jaw, have been known to result.

These habits have a great tendency to develop masturbation. In order to overcome any of these habits treatment should be begun early. Infants who practise them should have their hands pinned inside their sleeves by securely fastening the opening of the sleeves at the wrist with safety pins, or by means of tape fastened around each wrist and attached to a belt, or pinning band, long enough to allow free movement of the arms, but preventing the hands from reaching the mouth if thumb sucking is the habit to be cured. Another method which is admirably adapted to both infants and older children is to place on their hands the " Hand-I-Hold " babe mits, which are celluloid balls perforated with holes. There are numerous other methods of keeping the child's hands from its mouth, but these I have mentioned are to be preferred. Mechanical methods of treatment are the best. I have had little or no success in bandaging the hands or applying bitter substances to them; these precautions do not seem to deter children in the least from this habit. Older children should not be punished for thumb sucking, but rewarded for not doing it.

NAIL BITING

The habit of nail biting is best overcome by keeping the nails cut very short.

"THE PACIFIER"

The use of this rubber nipple, which often plays so large a part in the care of the baby, is one of the worst habits that has come under my observation.

It is a common thing to see the "pacifier" tied about an infant's neck so that it may always be at hand ready to place in the mouth. I have often seen the "pacifier," dropped upon the dirty floor or street, picked up by the nurse or mother, and placed in the child's mouth; perhaps first wiping it off on handkerchief or dress.

It is not difficult to see what a carrier of all kinds of germs this innocent looking little rubber appliance may be. Diphtheria, tonsilitis, thrush, tuberculosis, and syphilis are some of the most serious diseases that may be contracted by means of the "pacifier." Besides, it is a very bad habit in itself to use a "pacifier" to quiet a baby every time it cries.

Constant sucking causes a chronic congestion in the back of the throat with resulting adenoids. This word of warning should be sufficient to convince every wise mother that her baby should never become acquainted with the "pacifier."

MASTURBATION

This is not an uncommon habit among children, and it may occur even in young babies. It is most detrimental to the health of a child. In the case of boys

it is frequently the result of some irritation of the genital organ, such as a long or tight foreskin, smegma under the foreskin, highly acid urine, etc., while in the case of girls it may be from irritative discharges, highly acid urine, or some abnormal condition of the genital organs. Constipation, pinworms, sleeping in warm feather-beds, thumb, finger, or hand sucking, and tight or irritating clothing may bring about this condition in either sex.

With older children the symptoms are quite characteristic. Children who have contracted this habit are pale, sleep poorly, are easily tired, have dark rings under the eyes, often complain of headaches, are very quiet, have little animation, and do not care to associate with other children. They are apt to be absent-minded, and are unable to concentrate their attention.

If this condition is allowed to continue they become morbid, and, in extreme cases, may even develop melancholia and mental weakness, insanity, or epilepsy.

Masturbation in infants and very young children may not be recognized by the mother until it has continued for some time, and even then the meaning of the symptoms is rarely realized at this tender age. Masturbation is usually brought about by rubbing the genital organs against some object, or by crossing the thighs and causing friction by constantly rubbing them against each other. In older children, especially boys, the act is frequently accomplished by means of the hands, but numerous other ways may be employed.

During the act of masturbation the child's face becomes flushed, there is rigidity of the body and lower extremities, followed by relaxation, more or less exhaustion, and often perspiration.

It is very important that this condition be recognized early and that it receive appropriate treatment, as it is much more easily cured in its earliest stages than after it has been practised for some time and become a fixed habit. All local causes such as have been mentioned (if they exist) should be removed.

In the case of babies, and children under two or three years of age, if they have acquired the habit of thigh rubbing, a very thick diaper or pad may be applied, so that the thighs cannot be brought together. In the case of older children a crutch for this purpose is employed. When the hands are used they should be tied about each wrist with a bandage which passes back of the neck and is tied in front, and which should be long enough to allow free use of the arms and yet short enough to prevent the hands from reaching the genitals. Another method that may be employed in these cases is to inclose the hands in the " Hand-I-Hold " celluloid babe mits.

Older children should be kept from bad companions, left alone as little as possible, and helped and encouraged to strengthen their will power, and so overcome this habit. They should also be kept in the open air as much as possible, given cold salt-baths, and in every way efforts should be made to improve their general physical condition as much as possible.

STUTTERING, STAMMERING, LISPING, DELAYED TALKING

Stuttering is occasionally seen in a great many children, especially when they are learning to talk but have not completely mastered the art. At this age it is temporary, lasting for a few weeks or months, only. It not infrequently accompanies malnutrition or anæmia, or follows some one of the acute illnesses.

Stuttering may be inherited, or may be acquired from imitation of, or being constantly with, one who stutters. Permanent stuttering does not occur until about the sixth year of age.

Practically all cases in very young children recover entirely, but they should be carefully watched to prevent it becoming a fixed habit. Older children should be under the care of a competent teacher, who teaches them how to breathe and the use of the voice, tongue, and lips in speaking.

Stammering is very similar to stuttering, except that certain separate sounds are hard to make, usually on account of some defect of the lips, tongue, teeth, or palate. These defects should be corrected and the child be carefully trained in speech.

Lisping is due to some fault of the organs of articulation and should be treated in the same way as stammering.

Backwardness in learning to talk may be due to a long or serious illness in an otherwise normal child; or it may be due to idiocy. Children two years old who are not deaf should be able to speak.

VACCINATION

Babies in good health should be vaccinated by the fourth or fifth month, as the younger the child the less will be the constitutional disturbance. The place chosen in vaccinating girls is the outer side of the calf of the leg, as at this point there is less danger of injury to the resulting scab and of leaving an objectionable scar than would be the case in vaccinating the arm. Boys, however, may be vaccinated on the left arm.

Only a small area, an eighth of an inch square, should be scarified. No vaccination shield should be used, as by its use the wound is much more apt to become infected. The shield usually becomes displaced and so causes irritation and very probably infection.

After a child has been vaccinated a sterile gauze dressing should be applied, which should not be removed for three or four days, when a clean dressing should be applied.

If the vaccination becomes infected and causes trouble it is usually due to uncleanliness in the care of the wound, not to the vaccine matter. On the tenth day the reaction and fever are at their height. Tub bathing should be stopped until after the scab falls off.

GRIPPE, INFLUENZA

This is an infectious communicable disease and is due to a specific germ. It occurs sometimes in severe

epidemics, but ordinarily appears every year, frequently during the winter months. The period of incubation is short, varying, in most cases, from one to seven days. When uncomplicated this disease lasts from two to seven days, but complications are frequent, especially bronchitis, acute inflammation of the glands of the neck, pneumonia, otitis media, diarrhœa, and digestive troubles.

The onset is usually abrupt; the symptoms are chilliness, fever, muscular pains, great prostration, headache, and sometimes vomiting or convulsions. The temperature ranges from 101° to 103° F. in the mild cases, but in the severe form may be 102° to 106° F. Marked prostration is characteristic of all forms of this disease. Sometimes cases closely resemble typhoid fever, with heavily coated dry tongue, parched lips, and rapid, weak pulse. Although in the uncomplicated cases the severe symptoms with high fever usually last only a few days it takes a long time to recover from the effects of the disease, and the system is always left in a weakened condition.

Catarrhal symptoms often predominate, with severe cold in the head, sore throat, and frequently tonsilitis. The infection often involves the ear, with resulting otitis, and the glands of the neck may become swollen. In the most severe cases the bronchial tubes and lungs may become affected and broncho-pneumonia ensue.

In other cases we have vomiting and diarrhœa predominating, together with other general symptoms of fever and prostration. Infants under six months

of age may not be able to resist the severity of the poison of influenza, and succumb in two or three days, or, after a week of increasing prostration, may die. Not a few of these severe cases develop pneumonia, which brings about a fatal termination.

A child with influenza should be isolated in a room by itself, and kept in bed as long as the fever lasts. At the onset hot drinks should be administered and the patient placed in a hot pack to induce free perspiration, and a full dose of castor-oil should be given. After the acute symptoms are over the child will require tonics, and maltine and cod-liver oil for the cough, which often persists. A change of a few weeks to a warm dry climate will effect a cure more quickly than anything else. The mountains, Hot Springs, Virginia, North Carolina, Lakewood, or Atlantic City makes the most beneficial change when it is possible to bring it about. Tuberculosis is especially prone to follow in the wake of influenza, and should be very carefully guarded against.

DIPHTHERIA

Diphtheria is one of the most insidious, treacherous, and dangerous diseases to which children are subject. It is due to a specific germ called, from its discoverers, the Klebs-Loeffler bacillus.

The period of incubation is variable. Children may develop the disease a few hours after exposure, or it may not appear for several weeks. A bacteriolog-

ical examination of the throat is the only sure means of determining whether the disease will develop.

Diphtheria may be contracted by direct contact, or the germs may be carried in clothing, books, toys, etc. One attack does not confer immunity to the patient for more than a few weeks, and second and third attacks are frequent. Diphtheria usually attacks either the nose, throat, or larynx, but may affect any mucous membrane. The onset of the disease is usually gradual, with loss of appetite, sore throat, slight fever, headache, indisposition, and irritability; there may be slight swelling of the glands at the angle of the jaw, and pain on swallowing. The tonsils may be swollen and red, and frequently irregular patches of a dirty white or grayish membrane on one or both of them may be seen. This membrane may be yellow in color, and the appearance of the tonsil may closely resemble tonsilitis; sometimes the only way of distinguishing between them is by a bacteriological examination.

In nasal diphtheria there is frequently no visible membrane, but there is always a foul, bloody discharge from the nose, which may last weeks or months, with little or no accompanying fever.

Laryngeal diphtheria is the most serious and quickly fatal of any form of this disease. Its symptoms are like those of croup, but it is more insidious in its onset. The symptoms grow steadily worse, and prostration supervenes. The child becomes blue, the breathing labored, and, if relief is not immediate,

death ensues from suffocation. Frequently this type of the disease requires intubation.

Diphtheria antitoxin has been proved beyond doubt to be a specific for the disease, and is the means of saving thousands of lives every year. It should be given at once as soon as the diagnosis is made. If there is the slightest doubt as to whether the case is one of diphtheria or tonsilitis it is not safe to wait for a bacteriological examination, as it may be too late.

The initial dose of antitoxin in most cases should be 10,000 units, and never in any case less than 5,000 units. Local treatment with antiseptic mouth washes and gargles in connection with antitoxin are valuable, but should never be relied upon alone.

A child with diphtheria should be kept in bed so long as there is fever, and under strict quarantine until bacteriological examination shows the nose and throat to be free from the diphtheria germ. All discharges should be disinfected with a 1 to 20 solution of carbolic acid, and at the termination of the disease fumigation and disinfection done as in scarlet fever.

SCARLET FEVER

Scarlet fever should always be regarded as a most serious disease on account of its frequent and dangerous complications. Its period of incubation is from one to six days, and it is contagious from the appearance of the first symptom until desquamation is com-

pleted, which may be as long as six weeks. If purulent discharge is present from the nose, ear, or other mucous surface contagion continues until such discharge has been cured. The risk of contagion is greatest during the febrile stage.

The onset of scarlet fever is sudden, with high fever, rapid pulse, sore throat, prostration, frequently vomiting, and rarely convulsions. The rash appears from twelve to twenty-four hours after the initial symptoms, though there are cases where it does not appear until the third or fourth day. It is usually seen first upon the neck and chest, but frequently also in the groin and on the thighs and back. It spreads very rapidly over the whole body, in the course of a few hours the face also being involved. A peculiar pallor about the mouth is almost always present in this disease.

The rash is of a bright scarlet color, and consists of minute red points so close together that, from a distance, there is the appearance of a uniform blush; in fact, the appearance is that of a "boiled lobster." With the full development of the eruption there is intense itching of the skin.

There are all grades of severity in scarlet fever, from the very mild cases, where the fever is only 101° F. and the rash so slight that it may easily be overlooked, and lasting only a few hours, to the most severe and malignant forms.

In moderately severe cases the fever rises rapidly, and by the end of twenty-four hours has reached 104° F. or 105° F. The intensity of the rash, which

appears during the first twenty-four hours, is in direct proportion to the severity of the other symptoms. The tongue is coated, and on account of the intense redness of its tip and margin, and the prominence of its papillæ, is called the " strawberry tongue " and is a marked characteristic of the disease.

The throat is red, and the tonsils look inflamed and may even have membranous looking exudates upon them. The patient is very restless and has great thirst. The glands at the angles of the jaw may be enlarged and tender, causing pain on swallowing. At the second or third day the fever is at its height, and as a rule, about the fourth or fifth day it begins to fall gradually with the fading of the rash; but in some cases, even if there are no complications, the fever may last for ten or twelve days.

The heart action is always rapid in the beginning of the disease; later it may be weak. There is always more or less prostration.

The complications most common in scarlet fever are otitis media, or abscess in the ear, acute Bright's disease of the kidneys, inflammation, swelling, and sometimes abscess, of the glands of the neck, and cellulitis of the neck.

Scarlatinal synovitis of the joints, and, more rarely, membranous sore throat or diphtheritic sore throat, pleuro-pneumonia, or heart disease (endocarditis) may complicate scarlet fever.

Scarlet fever is due to a germ that gains entrance into the body through the nose or throat, and, in some instances, probably through an open wound. The

contagion is very tenacious, and may be transmitted from one person to another by direct contact, or by means of infected clothing, books, toys, milk, etc. The contagion, under favorable conditions, may remain active for months, and produce the disease as opportunity presents itself.

When a child contracts scarlet fever it should be isolated at once in a room that can be most easily quarantined, if possible on the top floor. Children in the house, who have not been exposed, should be quarantined in another room for a week to see if they come down with the disease.

After the child has recovered, before being allowed to mingle with other children, the hair should be cut short and the child should have a thorough scrub bath from head to foot with soap and warm water, followed by an antiseptic bath of 1 to 5,000 bichloride of mercury solution.

The nurse should be under a strict quarantine as well as the patient, and never go into another room or mingle with the family until she has changed her clothes and washed and disinfected her hands and face. She should always wear a close-fitting cap while on duty, to avoid infection of the hair and scalp.

The physician who is in charge of a case of scarlet fever before entering the sick-room should remove his coat and overcoat, and put on a long gown that buttons tightly about the neck and extends to the ankles. On leaving the sick-room he should wash and disinfect his hands and face.

When desquamation begins the child should receive

a daily warm antiseptic bath, followed by a rub with white vaseline or boracic acid ointment. This will hasten the removal of the scales and prevent the spread of the disease. During the height of the rash and fever warm baths, followed by vaseline inunctions, are soothing and restful, and help to reduce the temperature and allay the intense itching. An antiseptic gargle should be used several times a day to cleanse the mouth and throat. A child with scarlet fever should not be allowed out of bed, and should be kept on a liquid diet for three weeks. All discharges from the patient should be at once disinfected, also all clothing or bed linen before being sent to the wash.

On the termination of the case, after fumigation of the room and steam sterilization of its bedding, carpets, etc., the walls should be repapered or painted, the floor scrubbed and then washed with an antiseptic, and the woodwork painted, when this is possible.

MEASLES

Measles is one of the most contagious diseases. One attack usually protects against a second, but not invariably. I have myself seen a few undoubted second attacks.

The period of incubation is from thirteen to fifteen days, counting from the time of exposure to the appearance of the rash, or for from nine to ten days from the appearance of the first symptom.

Measles begins very much like a cold in the head,

with a dry cough, sneezing, and running from the nose. The eyes become red and the lids swollen, the light gives pain and causes watering of the eyes. There is loss of appetite, and slight fever of 100° to 102° F. At this time the mucous membrane of the throat and mouth becomes red. On the third or fourth day the characteristic rash breaks out, first on the temples and face, and then rapidly spreads to the body and extremities. This rash appears as small rose-red spots which quickly develop into papules that may coalesce, giving the face a very much swollen and congested appearance.

The papules of measles have a distinctly crescentic arrangement. It takes two days for the rash to develop fully. It remains at its height for two or three days, then begins to fade, and in two or three days is entirely gone. When the rash is at its height the fever is highest, ranging from 103° to 105° F., but subsides with the subsidence of the rash, when desquamation, or shedding of the skin in fine scales, begins. This usually takes from ten days to two weeks, but may be hastened by warm baths, followed by inunctions with white vaseline. The period of quarantine in New York is at least three weeks.

Measles is contracted by direct contact, and is not transmitted by a third person or by means of clothes, books, etc. It is probably most contagious during the early or catarrhal stage of the disease.

A child with measles should be isolated in a room by itself, put on a reduced diet, consisting mostly of broth, soup, and milk for older children, and diluted

milk for babies. A warm bath should be given every day, followed by inunctions of white vaseline. The patient should remain in bed so long as there is any fever. The sick-room should be darkened, and the eyes washed several times a day with a saturated solution of boracic acid.

Measles is considered by many not to be serious in its nature. In young and delicate children, however, measles not only in itself may be dangerous, but on account of the complications, especially bronchitis and pneumonia, which not infrequently arise, may be fatal.

To avoid such complications cases of measles should be under the supervision of a physician whenever this is possible.

GERMAN MEASLES

German measles is usually a very mild disease, and is much less contagious than either measles or scarlet fever.

The period of incubation is variable, but in a majority of cases is from eight to sixteen days. There may be symptoms of a mild catarrh, with indisposition, drowsiness, and slight fever, before the rash appears; but usually there is an eruption upon the face of small pale red or pinkish papules from the size of a pin's head to that of a pea. These papules rapidly spread to the rest of the body and may last only a few hours, or one or two days, or, at the longest, three days. They fade rapidly, and the slight desquamation following may last from one to four or five days.

There is a slight swelling of the glands at the back of the neck and angle of the jaw in German measles, which is most marked at the height of the disease and subsides slowly without suppuration.

One attack usually protects against another, but not against measles. Quarantine is not necessary.

The treatment consists in giving a cathartic, warm baths, inunctions of white vaseline, and suitable medication for conditions that may arise.

CHICKEN-POX

This is usually a mild disease with no complications. In rare instances, however, there may be a profuse rash, with considerable temperature. I have seen one or two cases where the kidneys were involved, and a number of cases where bad scars resulted resembling those of smallpox.

The period of incubation varies from two to three weeks, but in most instances the disease develops in seventeen days.

Usually the first symptom that is noticed is the appearance of the rash, which looks like little water-blisters with small red areas about them. These come out in crops, a few at a time, on the head and face, and then upon the body, and can be seen in all stages of development on different parts of the body. The fever is low, rarely going above 102° F., and more often not above 100° to 101° F. There may be slight indisposition and loss of appetite, but often, with the

exception of the rash, the child seems apparently well.

Children with chicken-pox should be kept in the house for a few days until the rash begins to dry and form scabs, but they need not be under strict quarantine unless there is danger of exposure to other children who are young and delicate.

Children with chicken-pox should not be allowed to go to school or be with other children until the skin is perfectly clear, which usually takes about three weeks.

It is important that there should be no scratching, as scars may result. The itching can be greatly relieved by sponging with alcohol or soda and water, and then anointing freely with boracic acid ointment.

MUMPS

Mumps is an inflammation involving the parotid gland. This gland is situated in the front, below and behind the ear, where the swelling appears. The submaxillary gland at the angle of the jaw is also frequently involved, and any of the salivary glands may be; rarely the testicle or ovary. It is probably only contagious from direct contact. One attack protects against a second.

The period of incubation varies, but in the majority of cases is from two to three weeks.

The first symptoms are usually headache, drowsiness, loss of appetite, with slight fever and reddened throat. Then the parotid, usually first on one side,

becomes swollen, there is pain on chewing and swallowing at the angle of the jaw, and acids or sour things cause pain when taken into the mouth. The fever ranges from 100° F. to 103° F. Usually the glands on both sides of the face are affected, but not at precisely the same time, one side preceding the other by a couple of days.

The swelling of the glands continues for three or four days, when it begins to subside, and at the end of four or five days has reached its normal size.

There are rarely any complications of a serious nature accompanying mumps, and it cannot be considered a serious disease when proper precautions are taken.

A child with mumps should be put to bed in a room by itself, and kept on fluid diet until the fever and swelling have subsided. An antiseptic mouth wash and gargle should be used several times a day, hot applications of towels wrung out in hot water should be renewed every half-hour or so over the swelling, and applications of warm ichthyol, or guaiacol, should also be kept up. At the beginning of an attack the bowels should be thoroughly opened by means of a saline cathartic.

WHOOPING-COUGH, OR PERTUSSIS

Whooping-cough in later childhood may be ranked among the milder contagious diseases, but in infants and delicate children it is a most serious and often

fatal disease. This is because of the frequent complications that ensue, the principal ones being broncho-pneumonia, convulsions, and, in summer, diarrhœa.

It is estimated that at least two-thirds of the deaths from whooping-cough occur during the first year of life, and of this number the largest proportion are from broncho-pneumonia, the next from diarrhœa, and the last come convulsions.

Whooping-cough is due to a germ, and may be communicated to others from the beginning of the catarrhal, or first, stage of the disease until after the spasmodic stage is passed, and possibly longer.

The period of incubation is usually about two weeks, but may be shorter. In whooping-cough there are usually three stages in the progress of the disease: these are known as the catarrhal, the spasmodic, and the stage of decline. The catarrhal stage usually lasts from one to two weeks. The symptoms are first, a cough—such as is seen in bronchitis—which, at the end of a week, becomes more serious, with recurrent paroxysms. These paroxysms increase in frequency until the typical crowing sound, known as the whoop, and indicating that the spasmodic stage has begun, is heard. From now on the typical paroxysms will occur more and more frequently, after each series of explosive coughs there will be the characteristic whoop and expulsion of a plug of mucus from the throat, while during the paroxysm the eyes protrude and the face is of a deep red, and, sometimes, even of a purple hue. Vomiting occurs with most of the severe paroxysms of coughing especially if they come shortly

after eating. Sometimes these are accompanied with slight nosebleed. The number of paroxysms may vary from five or six, in the beginning, to forty or fifty in severe cases, during the twenty-four hours. These attacks are not only very exhausting, but on account of the frequent vomiting of food, the child is enfeebled from lack of nourishment. The paroxysms of coughing are always more frequent and more severe at night and also in a close room.

In mild cases no whoop may be heard during the whole attack, but there is usually vomiting, and the cough is of a paroxysmal nature.

The whooping stage of the disease is of a variable duration, but in many cases lasts about a month, gradually increasing in severity for the first half, and then subsiding, except when modified by treatment.

After the whoop has ceased we have the stage of decline, with a cough resembling that of bronchitis, and this stage is again variable, not infrequently lasting a month or two if neglected.

My experience has been, after treating 923 cases of whooping-cough, that a great deal can be done to alleviate the symptoms, to decrease the number and severity of the paroxysms, and also the vomiting, and to shorten the attack of the disease very materially.

The earlier cases come under the care of the physician and proper medication, the less will be the danger of complications and the more favorable will be the ultimate result. Abundance of fresh air is of great importance in treating this disease.

TUBERCULOSIS

Tuberculosis is an infectious disease due to the tubercle-bacillus. It may attack almost any organ of the body.

When the lungs are affected it is called pulmonary tuberculosis, or consumption. If the covering of the brain is affected it is called tubercular meningitis; if the hip-joint, hip-joint disease; if the glands of the neck, tubercular adenitis; if the bones of the spine, Pott's disease; if the peritoneum, we name it tubercular peritonitis. The kidneys, bladder, liver, intestines, and other parts of the body may be affected, but the most frequent seat of the disease is as above mentioned. Sometimes, in young babies, we find a general tuberculosis, or miliary tuberculosis.

The prognosis of tuberculosis depends upon its location. Tubercular meningitis and miliary tuberculosis are almost always fatal. Tuberculosis of the lungs in young infants is usually so, but children seven to ten years of age, with proper management, usually recover. The prognosis of tuberculosis of the glands of the neck, tuberculosis of the hip-joint, knee, or spine is favorable as far as life is concerned.

Tuberculosis is not hereditary, but children may inherit a tendency, or susceptibility, to the disease.

The germ of tuberculosis gains entrance into the body through the inspired air. It is in the dust of the street, in public conveyances, and in the dust from the rooms where tubercular people have lived. Tuberculosis may also be transmitted by food, drink, and

kissing, and it is dangerous to be near a tubercular patient who is coughing.

Cases of tuberculosis must be under the constant care of a physician. Each affected part of the body will require its own special treatment, but all cases need good food, abundance of fresh air, rest, and careful nursing, and they will be more likely to improve in a dry climate at an elevation of one thousand to fifteen hundred feet above the sea level.

The preventive treatment of tuberculosis in children is to keep them away from people who have the disease, and to see that their physical condition and general health are of the best. This is to be accomplished by carefully regulated diet, outdoor exercise, good ventilation at night, care about catching cold, etc. These methods make the child resistant to the germs of tuberculosis.

Every one at some time has probably taken the germs of tuberculosis into the body, but it is only in those who are feeble and non-resistant—in other words, where the soil is favorable to their growth—that the germs gain not only lodgment but a permanent foothold, and tuberculosis is the result. If the germ of tuberculosis always caused the disease every one in the world would probably die of this trouble.

RHEUMATISM

Rheumatism in a child should always be looked upon as a disease of serious nature, from the fact that,

if not taken in time, the heart is so frequently affected, leaving the little patient, in many cases, an invalid for life.

Rheumatism is quite a frequent disease after the third year, and has many symptoms and phases different from the rheumatism in adults. It may appear in varying degrees of severity. Not infrequently the mild attacks are so slight that they are overlooked, a physician is not called in, and a diagnosis of rheumatism is not made. The slight pains complained of are considered " growing pains " or sprains, and only later, when valvular heart disease appears, it is realized that the child has had rheumatism.

No attack of rheumatism is too mild to be ignored, for the mild cases are as apt to have heart complications as the more severe.

The severe articular form of the disease called inflammatory rheumatism manifests itself by high fever and reddened, swollen, painful joints, the child shrieking with pain if the joints are touched, and dreading the approach of any one to the bedside. This phase, however, is extremely rare in children under eight or ten years of age.

In every case of rheumatism, no matter how mild, the heart should be early and frequently examined, so that the case may have prompt and proper treatment. Probably more than eighty per cent of the cases of valvular heart disease in adults are due to attacks of rheumatism during childhood.

The onset is usually gradual, with slight fever ranging from 100° F. to 101° F. There may be slight

swelling and pain in one of the joints, those most frequently affected being the ankle, knee, foot, wrist, elbow, or hip, and there may be more or less stiffness. If the lower extremities are attacked the child will walk with a limp.

Often pain is complained of only in the tendons, ligaments, or muscles, one or more of these being involved. The pain is generally more pronounced after exposure and during damp weather.

Other manifestations of rheumatism are severe anæmia, stiff neck, Saint Vitus' dance, tonsilitis, and certain skin eruptions.

On account of its frequent recurrence, with the ever present danger of cardiac complications, children who have once had rheumatism should have interval treatment. That is, they should see the physician at certain stated intervals, and take the anti-rheumatic remedies a certain length of time out of every month, whether symptoms of rheumatism are present or not. This will keep the rheumatic poison from attacking the system.

SAINT VITUS' DANCE, OR CHOREA

Chorea is a nervous disease of rheumatic origin characterized by irregular, uncontrollable, spasmodic movements of the voluntary muscles of the body, and great mental irritability. It occurs most frequently between the ages of six and fourteen years, and girls are more often affected than boys.

Chorea is gradual in its onset, and is not accompanied by fever. Usually the first symptom noticed is that the child appears nervous, irritable, is easily frightened, and cries or laughs without cause. The child may be reprimanded for not sitting still, for wriggling, making grimaces in school, or for picking its clothing, drumming with its fingers, dropping things from the hands, when really it deserves no reprimand, as the disease destroys all nerve control. When the legs are affected the gait is uncertain, there will be difficulty in climbing stairs, and frequent stumbling or falling. In some cases spasmodic twitchings first begin in the muscles of the face, so that the child appears to be making faces.

The spasmodic movements become steadily worse until a large number of the muscles of the body are involved. The movements are irregular and jerky, varying in intensity from occasional muscular twitchings to nearly continuous motion. The child has no control over these movements, and they are aggravated by any attempt to stop them either on the part of the patient or others. Excitement or fatigue increases these movements, but they are not present when the child is asleep. Speech is not infrequently affected, because of involvement of the muscles of the tongue and lips and other muscles that take part in the act of speech. The child will attempt to speak and will pronounce several syllables correctly; then suddenly the voice will drop to a whisper or not be heard at all. Meanwhile, the child is making attempts to pronounce several words, and indulging in all kinds

of droll and fantastic gestures which make it appear ridiculous. After a little it will, perhaps, be able to utter a few more words, and then the same difficulty will be experienced, with the result that the child becomes hysterical, breaks down, and cries.

These are the symptoms in the moderately severe cases, but there are all grades of severity, from the very mild attacks to those extremely severe, when the choreic movements are so intense and constant that the child cannot stand or sit alone, cannot articulate, or cannot be kept still in bed, but throws itself aimlessly about and, if not mechanically restrained, will inflict severe bruises or other injuries upon itself. In this form of the disease the patient is very wakeful, and loss of sleep is found very wearing. Children so affected have poor appetites and are often pale and anæmic looking.

Mild cases or those of moderate severity may be otherwise in fairly good health, but frequently have headaches, poor appetites, sleep badly, and are easily fatigued.

One of the greatest dangers from chorea is complication by an acute endocarditis (heart disease). On this account, and from the fact that relapses and second attacks or other rheumatic affections are common, every case of chorea should be under the constant care of a physician, and the heart frequently examined.

A child with an attack of Saint Vitus' dance should have absolute rest, and all excitement should be avoided. Until the pronounced choreic movements

subside the little patient should be kept in bed and never punished or ridiculed on account of the choreic movements.

The diet should be simple and nutritious, all stimulants, such as tea and coffee, being forbidden.

Fresh air is important, but only a slight amount of exercise should be allowed and its effect on the child carefully watched. Warm baths given daily, combined with a moderate amount of gentle massage, are of decided value in some cases, while in others cold sponging may be of more benefit. All cases require iron tonics, maltine, and cod-liver oil, besides the specific medicines which are given in this disease.

An attack of chorea usually lasts about six weeks, but may be prolonged to three months, and in a few severe cases drags on for a year. It should be remembered that this disease is very apt to recur, and children who have had it should be carefully watched for any symptoms of its reappearance; they should have long vacations and should never be pressed in their studies, and they should be under the care of a physician, and seen by him at regular intervals.

In chorea much can be done to alleviate the symptoms, shorten the attack, and prevent such a complication as endocarditis by faithful co-operation on the part of the mother with the physician in charge.

MALARIA

This is a disease which, in its milder form, is frequently mistaken for other diseases, and, consequently, does not receive correct treatment.

Malaria is caused by a specific micro-organism in the blood called the plasmodium malariæ.

The symptoms of the milder form are drowsiness, loss of appetite, slight fever, or, perhaps, peevishness or fretfulness; after a time the patient looks pale and thin, and continues to lose weight. These symptoms may last for several weeks before more characteristic and definite ones appear.

The more characteristic cases have the symptoms of fever and drowsiness at a certain hour each day, or every other day, while between these periods the child is apparently well.

Other cases manifest themselves by a chill, with chattering of the teeth or chilly sensations, accompanied by high fever and followed by a profuse perspiration and subsidence of the fever. These symptoms usually occur every second or third day.

The cure for malaria is quinine, which should always be given under the direction of a physician who has made a blood examination and found the micro-organism present.

QUARANTINE ROOM FOR CONTAGIOUS DISEASES

This room should, if possible, be completely isolated. In a house, it should be on the top floor. If in an

apartment, it should be the room least used and the one that can be shut off from the other rooms.

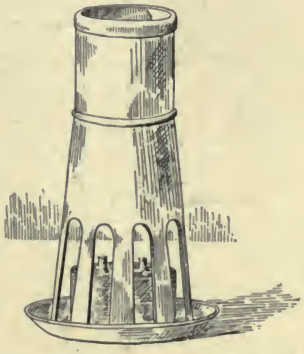
The child ill with a contagious disease should be placed in this room with the mother or nurse, and neither allowed to come out nor see the other members of the family. The furniture should be as simple as possible, the floor bare, and there should be no fancy curtains or hangings on the wall. The clothing worn by the attendant should be of washable material, so that when changed it can be placed with the bed linen in boiling water which has had a tablespoonful of carbolic acid to two gallons of water added. This should be done before it is given to the laundry. The meals should be left outside the sick-room door, and the nurse should get them from there, and before returning the dishes should place them in boiling water for five or ten minutes in order to sterilize them.

DISINFECTION FOR CONTAGIOUS DISEASES—FUMIGATION

After a case of contagious disease the child should be given a warm tub bath, using a soft brush and plenty of soap. The head should be washed with a 1 to 2,000 solution of bichloride of mercury, and after this is done the child should be removed from the sick-room and dressed in clean clothing. The bed linen and soiled clothing should be put to soak in a 1 to 500 solution of carbolic acid, which is two tea-

spoonfuls to the gallon of water, and left until they are washed. Before washing they should be boiled for thirty minutes.

Before the fumigation all cracks or crevices in the room must be sealed to prevent the disinfectant from escaping. Four pounds of sulphur are required for every 1,000 cubic feet of air space. The sulphur



Schering's Formalin Fumigator.

should be placed in an iron kettle, which is set on two or three bricks in a tub containing a couple of inches of water to prevent fire. Alcohol is then poured over the sulphur, it is lighted, and the room kept closed for eight hours.

A more convenient and perhaps more thorough means of disinfection is the use of formalin, six ounces for every 1,000 cubic feet of air space and four hours' exposure.

For this purpose * Schering's Formalin Disinfector is very convenient and inexpensive. Formalin Disinfection is preferable where possible.

In all large cities, after the mattresses, pillows, carpet, or rugs have been fumigated, they are taken charge of by the department of health, are subjected to steam under pressure, and returned free of charge. Where this cannot be done the pillows and mattresses should be well aired after fumigation and recovered. The floor of the room and the woodwork should be scrubbed with hot water and soap, and when dry should be washed again with a 1 to 1,000 bichloride of mercury solution. The furniture should also be washed with the bichloride solution, and also the walls and ceilings, unless they are repapered or painted.

Formalin Lamp (Schering).

The formalin lamp * is a simple, convenient, and safe little appliance for disinfection and deodorization of the sick-room or closets containing clothing, etc. It is only available for rooms less than 800 cubic feet in space.

*Schering's Formalin Disinfector is furnished at a cost of four dollars ($4.00), and the formalin lamp for $1 50, and are an excellent help in fumigation. These are both sold by Schering & Glatz, 150 Maiden Lane, New York City.

FLIES AND MOSQUITOES

Comparatively few persons realize the great source of danger that flies and mosquitoes may become, and how important it is to screen them from the house and prevent their coming near the baby when it is out of doors; this can be done by means of mosquito netting. Flies are very filthy insects; they feed upon all kinds of refuse and filth, and become contaminated with all manner of micro-organisms, which they carry about with them and with which they infect whatever they light upon. In this way many of our worst diseases, such as tuberculosis, typhoid fever, diphtheria, and many others, are spread.

The little fly is especially attracted by the baby's sweetened milk or the sugar on the child's cereal, and no one knows but that fly has just come from the excrement from a case of typhoid or the sputum from a case of tuberculosis, and will certainly infect the baby's food.

Some children are badly poisoned by the bites of mosquitoes. This is bad enough, but a certain variety of mosquito carries the micro-organism which produces malaria, which is more serious, because when children are bitten by this mosquito they become infected and malaria results. Another variety of this wretched insect carries the yellow fever germ, and the disease is in this way transmitted from one person to another.

All this shows the great importance of extreme care

in protecting the child from the dangers resulting from insect contamination.

When flies or mosquitoes have gained entrance into a house the greatest effort should be made to kill them.

WHEN SHOULD THE DOCTOR BE SENT FOR?

Whenever symptoms appear that the mother does not understand the doctor should be called. Two conditions demand his services at once, these are diarrhœa and sore throat; an apparently mild attack of diarrhœa, if it does not have the proper treatment immediately, may become serious or even fatal in a day or two. I have seen cases of cholera infantum where the patient died in thirty-six to forty-eight hours after the onset of the disease.

Any sore throat or croupy cough may be of diphtheritic origin, and no mother is competent to judge of the nature of the trouble, nor can she foretell what the outcome of the case may be. I have known cases of diphtheritic croup to be past hope in a few hours which could have been conquered if treated by a physician earlier.

If parents would only relieve themselves at once of the responsibility of illness, many a heartache might be avoided and many a little child kept from an untimely death.

If people fully realized that diseases, though apparently slight or trivial, if allowed to progress without

scientific treatment, often lead to grave conditions and even to fatal termination, there would not be so much neglect of slight ailments, as we often unfortunately find.

A physician, if called promptly to a case, can often prevent a long or a serious illness, or guard from complications, and thus not only obviate much suffering on the part of the child, but also avoid much worry and large expense for the parents.

MEDICINES

It cannot be too emphatically stated that the giving of patent medicines, cough syrups, soothing syrups, and patent diarrhœa mixtures, teas, and so-called blood medicines or tonics by a mother or nurse to a young child, on her own responsibility, is most reprehensible and dangerous. Most of these preparations contain opium or alcohol in some form, drugs which are badly borne by infants and young children, and should never be given except under the directions of one skilled in their use. Many infants suffer each year from the effects of these nostrums given by well-meaning but ignorant mothers.

A mother should have a list of simple remedies given her by the physician, and their uses explained, that she may use them in an emergency until the physician arrives, but outside of this she is not expected to know the use of drugs or prescribe for ailments.

WHAT TO DO IN CASES OF ACCIDENTAL POISONING

Accidents will happen, and children may get hold of medicine bottles and drink part of the contents, or be given the wrong medicine by mistake, or suck off the paint from toys.

The first thing to do in a case of suspected poisoning is to induce vomiting as quickly as possible, to rid the stomach of the offending material. For this purpose the throat may be tickled by sticking the finger down past the palate, and copious drinks of lukewarm water, or mustard and warm water, may be given, using a teaspoonful of mustard to a glass of warm water; warm salt-water, or soapy water, are also efficacious.

If the poison taken is an acid, the soapy water is an antidote and will neutralize its effects. After the stomach has been thoroughly cleared out by repeated vomiting, soothing substances should be given, such as barley-water, milk, sweet-oil, and the white of an egg that has been thoroughly beaten.

Where there are symptoms of great depression, stimulants will be required at once. Strong hot tea, which acts as an antidote to many poisons, should be given by mouth, hot water-bottles should be placed about the body, and hot coffee, with brandy or whisky in it, should be given as an injection by the rectum (bowel), and the patient kept flat on its back in bed.

When a great tendency to sleep prevails it usually indicates that one of the various forms of opium has

been taken. In such cases the child must be kept awake by dashing hot and cold water in succession on the head and chest, for if allowed to sleep it may never wake (as this drug makes the patient forget to breathe). Care should be taken that physical exhaustion is not produced by too strenuous measures used to keep the patient awake.

The treatment and antidote differ, of course, according to the poison taken. When the poison is known, if the antidote should not happen to be in the house, vomiting must be at once induced by large draughts of warm water, or mustard water, and such other treatment as has been indicated above.

POISONS AND THEIR ANTIDOTES

POISONS	ANTIDOTES
For carbolic acid and other mineral acids	Give chalk, magnesia (plaster off the wall in an emergency), carbonate of soda in solution, flour and water, or other glutinous or emollient drinks, large quantities of olive oil.
For corrosive sublimate, bedbug poison, sugar of lead, lead-water, blue vitriol, saltpeter, sulphate of zinc	Give albumen, white of eggs, flour, milk, and lime water equal parts, use warm water, mustard water, etc., to produce vomiting as quickly as possible. If available the stomach tube should be used to wash out the stomach.

For arsenic, Fowler's Solution, white precipitate	Give mustard and salt-water to produce vomiting; this should be followed by large quantities of olive oil, milk, or butter. The antidote is freshly precipitated hydrated sesquioxide of iron made by adding magnesia to any iron solution.
For strychnine, nux vomica, rat and beetle poison	Give emetics of mustard water and warm water, 5 to 10 grains of chloral, or 10 to 20 grains of bromide of potash will be required. The stomach should be washed out as soon as possible. The amount of chloral and bromide mentioned may be given to a child of five or six years by rectum (the bowel).
For chloroform	Give fresh air, artificial respiration, lower the head and pull the tongue forward, pour cold water over the head and face, hypodermic stimulation.
For aconite	Give emetics of warm water, mustard water, stimulants, such as brandy and whisky, injections of hot coffee by the rectum, hot water-bottles, keep flat on the back.

For opium, laudanum, morphine, paregoric, "soothing syrups"	If conscious, give emetics of warm mustard-water or greasy water to produce vomiting, or use the stomach-pump, keep the child awake, use stimulants both external and internal, hold aromatic spirits of ammonia to the nostrils, give hot coffee and brandy, use artificial respiration.
For caustic soda or caustic potash, lye	Drink freely of water with lemon juice or vinegar in it, diluted acetic acid, olive oil, plain vinegar, demulcents.
For silver nitrate	Give emetics, solution of common salt, demulcent drinks.
For iodine	Give emetics, demulcent drinks, external heat, starch or flour in water.
For lobelia	Stimulants externally and internally, and external heat.
For phosphorus, matches	Give emetics and purgatives; *never give oils.* Copper sulphate in emetic dose is the chemical antidote.
For tobacco	Give emetic, external and internal stimulants, and external heat.

For stronger ammonia water, bicarbonate of potassium, oil of vitriol, oxalic acid, hydrochloric acid	Give lime in water, magnesia or soap dissolved in water, freely, in large quantities.
For wine of antimony, tartar emetic	Give large quantities of warm water to encourage vomiting. If vomiting does not stop give one grain of opium in water. Give vegetable acids, such as tannic acid.
For copperas, carbonate of sodium, cobalt	Give emetics, soapy water or mucilaginous drinks.
For lead salts, as found in paints	Give prompt emetics, Epsom or Rochelle salts, then milk and a grain of opium.
For belladonna, atropine	Give emetics, mustard flour in water, cold to the head, stomach-pump.
For digitalis	Give emetics, follow by recumbent posture, tincture of aconite.
For illuminating gas	Give fresh air, artificial respiration, heart stimulants, brandy, whisky, and nitro-glycerin given by hypodermic.
For chlorine water	Give white of eggs, flour, milk.

For cantharides (the Spanish fly)	Give emetics, demulcent drinks, opiates by mouth and rectum, large draughts of water.
For croton oil	Give emetics, wash out stomach, followed by mucilaginous fluid, containing opium.
For zinc salts	Give carbonate of soda, emetics, demulcent drinks.
For sausage, meat, fish, mussels, cheese	Give emetics, purgatives (calomel), stimulants, emulsions, baths. Foods should be given very cautiously.

WHERE TO SPEND THE SUMMER

Where to take the child for the summer months is for many an important question to decide. Most people think they must either go to the seashore or to the mountains.

Children with catarrhal or bronchial affections, or those who have or have had adenoids, and children who are subject to rheumatism, are always better when taken to the mountains or to a fairly high altitude inland, where the air is dry and there is not that chill and dampness that is present at night at the seashore. The elevation need not be more than 600 to 1,000 feet above the sea-level to give satisfactory results.

I advise that all children who live in New York City or other seaport towns be taken inland to the hills for the summer, when this is possible, in order to give them a complete change of air.

Pale delicate children are wonderfully improved in health by a summer in the country, and living in the open air.

If possible, children should be kept out of the city from the first of June to the first of October.

The more robust type of child, and some delicate children, may do well and come home benefited by a sojourn at the seashore. When a place is decided upon it should be seen that a good milk supply can be depended upon, that the water is pure, the drainage perfect, the table generous, and the sleeping-room above the ground floor.

A small cottage has many obvious advantages over a hotel, one being that food can be more easily prepared for the baby in the kitchen than in a room at a hotel.

LIST OF THINGS TO TAKE WHEN GOING AWAY FOR THE SUMMER

It will be found very convenient when going to the country to have the following articles at hand. They may all be neatly packed together in a basket or a satchel suitable for the purpose. It is much better to have these, so far as possible, together, rather than scattered through trunks.

Fountain syringe
Hot-water bag
Roll of absorbent cotton
Mustard plasters
Court-plasters
Collodion or "New Skin"
Surgeon's adhesive plaster
Medicine glass, graduated
Glass funnel
Clinical thermometer
Spoon
Minim measuring-glass
Medicine dropper
Knife
Tweezers
Pencil
Labels for bottles
8-ounce bottle of brandy
8-ounce bottle of whisky
8-ounce bottle of boracic acid solution
8-ounce bottle of olive oil
4-ounce bottle of castor oil
8-ounce bottle of rhubarb and soda mixture
2-ounce bottle of syrup of ipecac
2-ounce bottle of white vaseline
4-ounce jar of cold cream
8-ounce box of bicarbonate of soda
Scissors
Corkscrew
Gauze
Bandages
Rubber tub

WHAT EVERY CHILD SHOULD KNOW

At the age of nine or ten years the mother or father should take the child into his or her confidence and explain to it in simple language the difference between the sexes, and the functions of the generative organs. This explanation will prevent the erroneous ideas about these important matters which may be gained from bad associates, and will give our boys and girls such knowledge as will enable them to protect themselves against venereal disease.

Dr. Edith B. Lowery has written an excellent book-

let entitled "Confidence-Talks with a Young Girl Concerning Herself," published by Forbes & Co., of Chicago. This little book tells the young girl in a beautiful way what she ought to know, and every mother should read it to her daughter.

Very good talks along this line have been got out in small educational pamphlet series by the Society of Sanitary and Moral Prophylaxis, 33 West Forty-second Street, New York, both for boys and girls. "Talks with My Uncle, the Doctor," is a little book of special value for the instruction of boys.

MENTAL INFLUENCE OVER THE YOUNG RECEPTIVE MIND

The mental influence that can be exerted over the receptive mind for good or evil is very great. Parents can do much toward influencing a child in the right way by studying its mental processes, learning its likes, dislikes, and susceptibilities. They themselves should be such examples in conversation and action as they would wish their child to follow. They should influence the child by suggestion, and work upon its pride. It should be remembered that imitation is a large factor in the education of children.

It is only too true that the child is image of the man, and reflects the character of its parents by its actions. It is therefore of primary importance that our boys and girls have wise and careful training while young if we wish them to be loving, obedient, as well

as healthy children, and finally grow up to be good citizens.

Children should be reasoned with, things explained to them, so that they may comprehend clearly why one action is wrong and another right. Much more can be accomplished in this way than by punishment. To win the confidence of a child and never allow that confidence to be shaken is of the greatest importance to its proper upbringing.

All these factors, influencing the child for good or ill, indirectly affect the health, and so appear to come within the province of the physician. A badly trained child is never as responsive to therapeutic measures as the well-disciplined and obedient patient.

PROBLEMS OF THE VILLAGE, SUBURBAN, AND COUNTRY MOTHER; AND WAYS TO MEET THEM

The care and bringing up of children in the country or small village is attended with many problems quite different from those met by the city mother.

There is the lack of running water and bathroom conveniences. This is one reason why many prospective mothers prefer to go to a hospital for their confinement.

In rural districts there is also the difficulty of getting milk which is iced soon after milking. It is sometimes almost impossible for the country milkman to ice his milk before delivering it. With this in

view it would be well for the mother to depend upon the nearest milk supply or the milkman who delivers most promptly, and see herself that the milk is put upon ice as soon as received. If the parents possess a cow, of course the problem is simplified, and a raw, fresh milk properly iced and ready for modification can be depended upon.

The advantage of obtaining milk from a mixed herd is that the composition is more uniform. A child may be made ill from drinking the milk from a single cow, if that cow is temporarily sick or out of sorts. There is less danger of such disturbance when the milk is taken from several cows.

Where incomes permit, the Walker-Gordon Company will express iced milk anywhere east of St. Louis or north of Atlanta, Georgia, though at considerable expense. It is much better to secure properly iced milk at whatever trouble or expense than to depend upon any of the prepared foods, milk powders, or condensed milk. No one food is so valuable for very young children as pure cow's milk.

The quality of the milk may be responsible, especially during the hot weather, for many baby illnesses. If dairy conditions are not sanitary, if the cows are not properly fed with fresh food, if everything connected with the milking is not cleanly, then the milk is sure to be contaminated.

Dairies supplying milk for large cities in the Eastern and Northern States are fortunately regulated by well-enforced laws covering these objections, but in the Southern and far Western States, where such

efficiency has not been reached, the dairy conditions are, in many instances, questionable and the milk supply often not of the best. People depending on such a milk supply had best sterilize the milk that is used for the baby immediately upon delivery; certainly during the summer months. The milk supply should be carefully investigated, and all conditions surrounding the producing and marketing of the milk looked into; if these are not satisfactory, and the milk is not cooled immediately to a temperature of 45° F. and put in sealed bottles, another milkman more nearly approaching the ideal should be patronized.

The dressing of children who live in the country is of importance and presents different features from the requirements of the city child. It is necessary to consider more carefully the changes in the weather, the dampness and chill from the ground, the walks over wet roads during the thawing springtime, and the chilly evenings and nights. In view of all this it is very necessary to take off and put on flannels as the weather changes. A good suggestion is to have two white and two gray or striped flannel underdresses, plainly made, to button up in the back. The white flannel dresses to be worn with a white slip in the afternoon, and the colored dress, under a colored apron, in the morning. Eiderdown booties for a child eight or ten months old are essential. They should be made by the half-dozen and put on over stockings. This will insure warm feet if the child is in the walker or near the floor, even if the

floor itself should be cold. These booties can be easily washed, and can be made either in white or in colors.

Children of the runabout age should be well protected from dampness when out of doors. They should wear good storm rubbers, and in the winter and early spring long leggings, sweaters, and greatcoats. It is unwise to allow children out-of-doors after the dew has fallen.

A bright active child is very apt to overplay, without a realization on the part of the parents that it is overdoing; on this account, the need of enforced rest or sleep in the middle of the day should be insisted upon. This will prevent any tendency to nervousness and give the body a chance to grow and develop in a normal way.

One problem that the country mother has to face is the difficulty of obtaining help, either to care for the children, or do housework. The many interests of the house, garden, fruit canning, chickens, etc., are very apt to interfere with the care of the children, make the mother neglect them, or break down her own health. It is, of course, a very difficult situation, but the mother should remember that the interests of her children are the most important and that whatever is neglected her duty to them is paramount.

DANGERS IN THE COUNTRY

There are certain dangers peculiar to country life for which the careful mother should always be on the

lookout. The children may eat unripe fruit, they may become poisoned, either externally or internally, from shrubs or berries, and there is the possibility of poisoning by mushrooms or toadstools.

The roofs, haystacks, and trees are a menace to life and limb should the child fall from any of them.

Country children delight to " go barefoot " during the summer, and stone-bruise, cuts from broken glass, injury by stepping on rusty nails may be the result. In the case of injury by a rusty nail there is always the possibility that lockjaw may develop.

Children should be taught to avoid all sharp tools, such as scythes, pitchforks, axes, etc.

Children are always so interested in animals that on a farm they may run the risk of being kicked or bitten by a vicious horse, or injured by angry fowls. I have a friend who lost an eye from the attack of a game-cock. Another friend had his ear nearly torn off by the bite of a horse, and I have known many cases where arms have been badly bitten by horses; all of which proves the necessity of teaching even very young children great caution with regard to the domestic animals.

When a child has eaten unripe fruit, and is suffering from severe pain due to colic it should be given copious draughts of tepid salt-water, or mustard water, in order to induce vomiting and so rid the stomach of the offending material. The bowels should be thoroughly cleansed by means of an irrigation of warm salt-water given with a fountain syringe. A hot water-bag should be applied to the stomach, a tea-

spoonful of paregoric given, the child put to bed, and, if relief is not immediate, the doctor should be sent for.

When poisonous fungi, such as mushrooms, etc., have been eaten, vomiting should be induced, as above stated, and a stimulant, either brandy or whisky, given. The child should be kept flat on its back in bed, and a cathartic, such as calomel or citrate of magnesia water, given.

The treatment for bruises, sprains, and cuts has been described under their respective headings, but it is well to remember that equal parts of powdered rosin and sugar bound on a cut is one of the best home remedies to stop the bleeding and close up the wound, while lead and opium wash, applied as a wet dressing over a bruise or sprain, will reduce the inflammation and relieve the pain, so that both these preparations should be kept in readiness.

For stone-bruise one of the best household remedies is to bind a piece of salt pork over the sole of the heel where the stone-bruise appears. This softens the thick skin so that the bruise can be opened and the pus evacuated.

If a child steps on a rusty nail the foot and wound should be carefully washed with warm water and soap. The wound should then be thoroughly cleansed with hydrogen peroxide, then with alcohol, and finally painted with several coats of tincture of iodine. This done, the wound should be tied up in a wet dressing of gauze soaked in boracic acid solution. There is a tetanus antitoxin now made which can be admin-

istered by the doctor in case there should be symptoms of lockjaw.

The following list of some of nature's remedies has been found valuable by many country mothers:

Plantain leaves soaked in hot vinegar and water will reduce inflammation by binding the hot leaves over the inflamed surface and repeating when the leaves are dry.

Wild-cherry bounce, made at home, with the cherries steeped in brandy and sugar, will act most beneficially on the bowels in case of diarrhœa.

Ragweed is nature's antidote for poison-ivy, rubbed on where the ivy has touched the skin.

Young dandelion and turnip tops boiled as spinach are nature's spring tonic; also young sassafras roots can be boiled and the water used as a palatable beverage. Sulphur and molasses make a good spring tonic and blood purifier.

In cases of bumblebee or wasp stings, a handful of mud bound on the wound and kept moist is very effective.

Mosquitoes are a great source of worry in the country; bathing the bites in a strong salt solution is very good.

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